

The Cosmic Aether

What has been accomplished in this book so far? A case in favour of re-admitting the banished aether has been presented. But what is the reader's verdict? Not proven? It is time to believe that a thunderball is a whirlpool of aether when we can reproduce thunderballs experimentally and harness their use in storing energy until heat is needed in a furnace application. We can await proof in the next century when someone contrives this experiment, and perhaps succeeds in cooling objects by extracting aether whirlpools developed within them. It is unnecessary to believe in an aether-based explanation of gravitation and terrestrial magnetism when our measurements tell all we need to know for practical purposes and there is existing theory which apparently satisfies the majority of those interested. It is mere speculation to presume to explain the origins of the solar system. Such speculation can be tolerated if founded upon accepted physics, but to invoke an aether in such an explanation is asking for a little too much credulity.

The reader has to be cautious. He need not be so cautious about believing Dirac's theory of the electron. After all, in spite of the criticism presented in this book, there is general acceptance of Dirac's work, abstract or not. And if you have to teach physics to others you must surely teach the physics which has appeal, abstract though it may be. So by all means be suspicious. Our minds are all part of a slow moving world made all the more inert by interactions which push and pull new ideas in all directions but prevail in rejecting what we do not want to believe. The aether is not wanted by the modern physicist.

If this book has been of interest it has served its purpose. Acceptance is not expected.

In the author's book *Physics without Einstein* a full analysis

and detailed quantitative account of the physics of the aether were presented. What was offered was an alternative to Relativity which went further and gave rigorous evaluations of the basic universal constants of physics. The Fine Structure Constant and the Constant of Gravitation were important results but also quantities such as the binding energy of the deuteron and the geomagnetic moment were shown susceptible to evaluation by the aether structure presented. Having discovered or, as some would say, contrived or built such a new theory, it was appropriate in this present work to attack the established theory. Relativity is intriguing because it is so elusive. It is seemingly impregnable. Yet, as we have seen, it has a weakness in respect of boundary criteria. The grand edifice of Relativity is built on the wrong foundation. In this work there has also been an attack on the abstract ideas in the physics of the electron. The alternative offered is an explanation which is no more abstract than the classical physics of the nineteenth century and yet one which actually explains the nature of mass. Above all, the alternative offered is not sterile. It is as fruitful as Nature herself.

The aether permeating and surrounding our earth is contemplated as a uniformly dense positively charged electric continuum containing discrete negative electric charges formed in a lattice array. Because of the translational motion of the earth some of these negative electric charges are free from the lattice as we have already noted in Chapter 4. The lattice determines the electromagnetic frame of reference and moves as a unit in a cyclic motion. The lattice charges are displaced from their neutral positions in the continuum and move in centrifugal balance. This motion determines the time parameter and is necessary to vitalize the aether and prevent a condition of negative electrostatic interaction energy, as may be shown mathematically. The continuum is endowed by the presence of some relatively sparse but massive aether particles which assure dynamic balance by the continuum system and which perform the key role in determining the electromagnetic action we know as gravitation. Also, each such particle is associated with an electron moving with the lattice system. Such electrons qualify the electrostatic interaction state a little and actually prime the

aether with energy so that it may sustain gravitational fields. This will, of course, seem very complicated and it is beyond the scope of this work to analyse the aether structure in detail. It suffices here to note that an aether expansion process may occur by which the massive positively charged aether particles expand to become a part of the uniform continuum and the corresponding electron becomes a negative lattice particle. Energy is released in this process, contributing to motion. Moreover, all the elementary particle forms of matter we know can be produced in transitional phases of this expansion process. The massive aether particle has nearly three times the mass of the proton. The creation of matter is a consequence of the expansion of space, the transient by-product of an expansion which permits parts of the aether occupied by such matter to adapt its stable state to a new apportioning of the particle populations.

Now, it appears that matter as we know it, as atoms, protons, etc., can only come into existence if an abundant supply of electrons and positrons is available.* Accordingly, we must anticipate the matter creation process to occur steadily at the unstable boundaries between aether of different polarities. If the earth's aether contains essentially low-mass negative particles, it cannot sustain the matter creation process. Nor can aether, according to the above model, with all polarities reversed. It is at moving boundaries between two such types of aether that we can look for the charge constituents to create matter.

This takes us to the concept that the sun contains aether of polarity opposite to that surrounding it and permeating the planets. The origin of the sun itself is the matter created as the two aethers meld at their interface, the enveloping aether form gradually closing in as the inner aether form appears to shrink by the polarity inversion process. But there is a prime movement of the boundaries owing to the translational motion of the solar system. In this way, atoms are being formed steadily from the aether and emit photon radiation generated from their thermal condition. Probably the nuclear interchanges, as heavier atoms form from the already created proton-sized matter, are the true

* See Chapter 7 of the author's *Physics without Einstein*.

source of the heat generating this radiation. But this account has gone beyond merely asserting a nuclear origin for solar radiation energy. The origin of matter has been traced to the aether. The gradual process of formation of matter as the solar aether shrinks in company with the gradual expansion of space is a feature of this new explanation as is the catalytic action of electric discharge phenomena in transforming the radiation source.

It is still speculation. Where is there any evidence? Well, the reversals of magnetism in astronomical bodies may provide some evidence. Remember that in Chapter 7 it was noted that Dirac said there was no way of distinguishing a star from one in which all the polarities of its constituent charges are reversed. This may be true as between two stars but, if all polarities in a particular star were to reverse, as they would if the aether inverted polarity, there would be a reversal of the magnetic field.

The same is true for the earth. Dirac also envisaged that, for reasons of symmetry, perhaps half the stars were made up of matter of inverted polarity, anti-protons substituting for protons and positrons for electrons.

Applying symmetry considerations to the aether we then may expect aether to comprise vast cubic cells of one polarity interposed between identical cells of opposite polarity as depicted in Fig. 12. Stars are indicated in a random distribution but a star in a region of positive aether would have an aether core of negative polarity on the principles outlined. Further, the symmetry, preserved even as space expands, would ensure that the flat boundaries are stable and not regions for matter creation.

We are still speculating, but at least have the comfort of the similar speculation by Dirac. But now let us examine some interesting evidence.

The solar system moves steadily through space following a curved path about a remote point in our galaxy. The earth shares this motion and every time the solar system passes one of the aether boundaries in Fig. 12 the earth's magnetic field will reverse direction. If the sun moves at right angles to a flat boundary, the earth's field will reverse at regular intervals. More likely is the migration of the sun along an oblique trajectory,

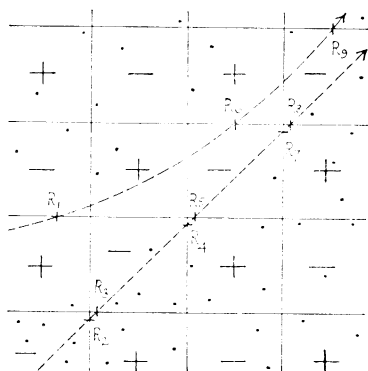


Fig. 12

such as one of those depicted by the broken lines in Fig. 12, and this would result in irregular reversals of the geomagnetic field. However, such irregular reversals would be systematic and could occur rapidly if the solar system passed close to an intersection between the aether boundaries. Three reversals could occur very close to each other in time in this occasional circumstance.

The reversals of the earth's magnetic field are typified by experimental data presented by A. H. Cook in the August 1970 issue of *Physics Bulletin* at page 350. These data are portrayed in Fig. 13.

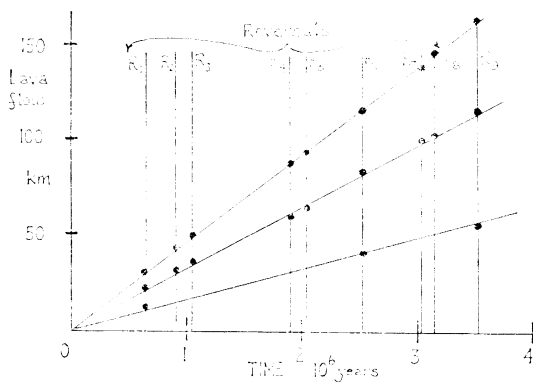


Fig. 13

Compare now these reversal data with a steady rate of progress along the trajectories in Fig. 12. Regard them as depicting motion in a circle from different viewpoints relative to the coordinate system created by the aether symmetry. The reversals in Fig. 13 can be matched exactly by the steady motion depicted in Fig. 12. Reversals are indicated at R_1, R_2, R_3 , etc. Further, there is the expected orbital pattern. This provides an assuring check on the proposal that there is an aether with symmetrical polarity inversion as depicted. Interested readers will see that given known data for the speed of the solar system through space, as measured relative to an assumed isotropic cosmic background radiation,* we can work out the cell dimensions of the aether. The lattice spacing is of the order of 300 light years. Also, from the earth orbit evidenced by the magnetic reversal data, an estimate can be made of the distance to the point in our galaxy about which we are moving and the orbital period of this galactic motion. An orbital period of 10^8 years is indicated by the data.

Before ending this book it is perhaps important to comment about the Michelson–Morley Experiment. Traditionally, aether theory has been set in conflict with the null result of this experiment. The author has dealt with this conflict in his previous works† and has really nothing to add that is new. Reference is, however, made to the recent analysis of Ruderfer‡ who has reviewed the subject only to conclude that the aether is very much in evidence and in no way rejected by the Michelson–Morley approach.

Ruderfer writes:

In retrospect, the search for dynamic proof of an ether has been a sterile one. It has distracted us for over a century from what may be stated as the original fundamental question: Is the space between matter a void or a plenum? When approached in this way, the ether may be viewed as a natural extension of the known hierarchal structure of matter—ponderable bodies, compounds, atoms, elementary particles. The relative rapidity of the discovery of this series and the prevalent belief in the existence of an elementary particle substructure

* E. K. Conklin, *Nature*, June 7, 1969, p. 971, gives 160 km/sec.

† The books referred on page 130.

‡ M. Ruderfer, *Lettere al Nuovo Cimento*, Series I, Vol. 3, pp. 658–62, 1970.

presages further structural delineation in the microcosm, conceivably ad infinitum. The ether may then be regarded as the repository of all the submicroscopic structures that may conceivably exist but are beyond present observational limits. The attribution of energy properties to such a plenum inevitably follows. In fact, the measurable QED and the relativistic effects of matter on the vacuum and space-time provide independent support for the necessity of ascribing energy properties to the ether: from the minuteness of these effects of the interaction of matter and ether, it must be surmised that the ether energy density must be much greater than that of matter. That all of the energy of the observable universe may then originate from the ether now becomes plausible.

Later he writes:

In summation, the various physical disciplines appear to be intricately interwoven with the concept of an ether. One may wonder if the widespread rejection of an ether, which primarily derives from the inability to dynamically detect it, is worth the loss of its synergistic potential in physical theory.

This is seemingly a good note on which to end, but why should the reader be left to ponder a philosophical problem? Instead, the reader is offered the stimulating thought that the aether is about to reveal its essential role as a source from which matter originates and into which matter dissipates itself. There is energy conservation but matter is really particles of energy in an intermediate state of decay between their primordial origin (particles having a mass some 5063 times that of the electron) and their primordial destiny (particles of about 0.0408 electron mass units or part of the fluid plenum, depending upon their polarity). These quantities are fully explained in the author's analysis elsewhere.* But now it appears that some further experimental support is at hand. Such particles, as ingredients of the unseen aether, have never been detected directly, but if the aether contains particles of these dimensions what would be their consequence to electromagnetic wave propagation? Might not they affect frequencies corresponding to their annihilation or creation? The related photon frequencies correspond with energies of 2.58 GeV and 20.9 keV, respectively. It is then

* *Physics without Einstein.*

interesting to quote a problem of cosmic X-rays recently reviewed in *New Scientist and Science Journal*:*

The main stumbling block to progress is the shape of the X-ray spectrum. This has a curious discontinuity at 20–40 keV, usually termed the kink or break; it corresponds to a break at 2–5 GeV in the parent electron spectrum, which is itself hard to explain.

It must ever be remembered that when we look up into space we are not just looking at the stars, but are also looking into the aether. If we see things which are difficult to explain in terms of the phenomena we associate with ordinary matter then perhaps we should take note of the aether and develop our understanding of aether science.

If we want to stay in the laboratory, however, maybe we should turn back to page 28 and question Wilson's experiment with the swinging iron bar. His experiment really tested the effect of swinging the earth relative to a detector on the bar. This is possible if you rely on Einstein's principle, which Wilson did. In an experiment in which he rotated a test specimen relative to the earth frame he did observe a magnetic effect. Of this, he said:

The current appeared to be due to residual magnetism in the iron case, which could not be got rid of.

This was in spite of the fact that he rotated the specimen about vertical and horizontal axes.

Relativity killed Wilson's experiment, just as:

Einstein's special relativity killed this idea of the ether. But . . . one can get over the difficulties of reconciling the existence of an ether with the special theory of relativity.

So said Dirac[†], but let us not theorize. Rather let us examine these effects which Wilson cannot get rid of.

* Page 287, February 11, 1970.

† P. A. M. Dirac, *Scientific American*, May, 1963, p. 50.