INTRODUCTION

New Energy Physics and the Discovery of Ambipolar Energy

Widening the vistas: a new energy model for Physics

Hiding in plain view is often the best way to keep a secret. And that's precisely where the secrets of these pages have been hiding - in plain view. They tell the story of massfree electric energy - the energy that gives rise to the azure blue of our terrestrial sky during daytime, the energy that emanates from our Sun, the energy that permits the stimulus of Light to propagate across Space, the energy responsible for the cosmological production of the cosmic microwave background (mCBR), the energy that radiates from any and every induction coil and even makes possible the mainstay of our modern civilized world - long-distance communications. It is in this plain view, with all its layers and complexity, that this massfree electric energy has been hiding.

In the previous volume, and following the lead of Leibniz, we called this energy, Dark Energy [1, 2]. We also explained then, and demonstrated, that it does not constitute the entirety of what we called Dark Massfree Energy. In fact, in the previous volumes we studied another form of massfree energy - latent heat - and it, too, is a form of Dark Energy. All Dark Energy is massfree energy, but not all massfree energy is electric, or even Dark Energy per se.

What then is electric massfree energy? It is that specific portion of the Dark Energy spectrum responsible for the production of Light by means of ‘electric fields’. And it is the object of this second part of the second volume (ie Volume IIB) of Experimental Aetherometry.

Before detailing the properties of massfree electric energy - some of which, long before our own work, certain determined and inquisitive scientists had already wrenched from nature, and which we have now experimentally disengaged in a radically new manner, in the present investigation - we would like to introduce the reader to the wider vistas of our aetherometric science, and situate the new physics of energy that we are proposing. The reader should first realize that there has been, to date, nothing comparable proposed in the field which is even remotely like our analytical model. Every concept and function has been worked on through the probing work of investigation, to yield the actual principles of continuous variation such as nature reveals them.
Let us start, then, by the most troublesome concept or function, the moral and scientific concept equivalent to the concept of God in immanentist religions or monist philosophies - the Aether, or the problem of the Aether. Our singular concept and functions of an Aether are those of a massfree form of energy that exists in nonelectromagnetic physical forms. Straightaway then, the reader will realize that this Aether has nothing to do with the old Maxwellian concept of the Aether: it is not a Luminiferous Aether. Nor does it have anything in common with the stationary Aether of pre-Relativity days: it is not what is dragged by the motion of bodies, but what impels all bodies into motion (which is the fundamental reason why it has more in common with the nous of Anaxagoras, than with any classical or neo-classical Aether models). Nor can our concept and functions of an Aether be reduced to modified relativistic models of a Zero-Point Energy (ZPE) of the Cosmic Background Microwave Radiation (mCBR). The Aether, as we define it is, in fact, the actual energy which - in the vast cosmic spaces - produces the mCBR, so it certainly must not be confused with it!

The Aether is NOT electromagnetic energy; it is NOT composed of light or of photons. We shall return to this in a moment. And the Aether is not stationary, not a mechanical jelly made of springs and vibrators, nor something that fills some form of an Absolute Space. Nor is the Aether composed of hadronic particles or anti-particles, as more modern and even some rather interesting models propose (which does not, however, preclude the existence of cosmological mass, light or heavy leptonic, or even baryonic mass). For the Aether is NOT composed of inertial and gravitational mass, it is NOT made of Matter, whether leptonic, baryonic or hadronic, or whether ‘syn-matter’ or ‘anti-matter’.

The Aether is massfree energy, cosmic primordial energy that is free from the inertial and gravitational constraints of mass. It does not lack mass, it is not massless per se; rather, it is free from mass. This is a critical conceptual difference between the aetherometric concept of the Aether and all other concepts, save that of W. Reich.

The aetherometric concept of the Aether leads to a functional scheme of the relations between Aether and Matter which is radically different from the confused, comical versions of physical reality produced by present day Quark ChromoDynamics (QCD). For example, Gell-Mann, in his paper “Advantages of the Color Octet Gluon Picture” argues QCD has “the most obvious advantage” of being “fictitious”. And indeed, in QCD, all energy is said to be electromagnetic, though the relationship between forces (electromagnetic, weak and strong) may deploy either electric charge or glue, charm and color. These last three ‘quarkish’ properties are veritably metaphysical ones evoked solely to account for the delirious notion that, inside an ordinary lepton, there are lurking hadrons (and inside those hadrons, more leptons and baryons, and so on and so forth, in an endless violation of the principle of conservation of mass and mass-energy...) Quarks, gluons and partons are not, in any way, the concern of Aetherometry. But Aetherometry would draw attention to the fact that what these physicists and their fictions are essentially addressing are only their seemingly interminable studies of how particles of Matter are demolished - in the process of seeding new, supermassive particles - and then made to miraculously re-appear, as a function of the massive doses of kinetic energy or, more properly, of field energy which accelerators are capable of injecting into the interactions. Since mass-energy can be formed out of the field superimposition of massfree energy and since kinetic energy is nothing but energy of motion appropriated from a field by a particle, molecule or body of Matter, it is little wonder that physicists can be so endlessly entertained with studying the creation of hadrons
and their motes from the collisions of leptons and baryons. They then confuse the materialization of the field energy by way of a condensing interaction with particles of Matter (leptons, heavy leptons, mesons and baryons), with the energy constituents and the mass-energy structure of those particles of Matter. And so the paradoxical belief is formed that particles of still greater mass than the electron mass, and still greater mass-energy than the electron mass-energy, exist, somehow, inside of that electron, inside of its mass-energy. It was the failure of neo-classical field theory to explain meson physics that led to QCD, but it is the latter that, just as well, fails to adequately account for the field properties that lead to secondary superimposition and the creation of massbound particles.

In any case, our concern here is not QCD (elsewhere, in AToS, we will address this), but Aetherometry, and the aetherometric diagram of a physics of energy. The main lines of such a diagram are: Aether is massfree energy in its primary or cosmological radiative states: massfree electric energy and massfree latent energy (“vacuum”-native latent heat \[^{3}\]). Not all massfree energy, however, exists in fundamental or primary states. Aetherometry indeed contends that photons are also massfree - and not composed of tiny inertial masses, the concept de Broglie eventually settled for - even if other conventional models, like the Yang-Mills gauge theories have treated photons as massless force particles. And we contend further that gravitons, also, are composed of massfree energy - in fact, that they are the carriers of so-called ‘gravitational mass’, which, unfortunately is not mass at all, but the physical and mathematical massfree gravitational wavelength equivalent of inertial mass \[^{4}\]! So, recapitulating, photons and gravitons are also massfree energy productions. Yet, our model of the primary Aether does not include them. Indeed not, because photons are transient, local, secondary massfree energy manifestations of the kinetic energy dissipated by elements of Matter, and the gravitons are transient, local pulses of massfree latent energy which are constantly associated with the consistency of all Matter - or the stability of inertial mass-energy. In advanced Aetherometry, we will later learn that gravitons may also exist phenomenologically as such, anchored to the differential electric/nonelectric lattices formed by Dark Massfree Energy. But for now, we would want the reader to focus on this fact - that photons and gravitons depend upon the intervention of Matter to be what they are - local manifestations of massfree energy. Which brings us to the question of Matter - and, besides massfree energy, there is only Matter. No such fiction as anti-Matter exists in a physical-ontological sense. Matter is composed of monopolar charge carriers; a positron is not the anti-particle of a negatron, the common-variety electron - or an element of anti-Matter, anymore than an anti-proton is. These are simply ‘cute’ notions that carried the tentative empirical hypotheses of an epoch to heights of sheer idiocy. It offended the sensibility of modern Atomists to think that protons came with either positive or negative charge, and the poorly-understood fact that nature selects preferentially for negatrons and positive protons during particle-transfer interactions served as foundation for the ephemeral sign of anti-Matter. But protons or anti-protons, electrons and positrons, etc, are all elements of Matter. Independently of how transient, or not, their isolated existence as material constructs is, they are all particles of inertial mass, and their mass has an intrinsic energy content that corresponds exactly to their mass-energy. All elements of Matter are discrete units of mass-energy.

Summarizing, then, the new system of energy linkages we are proposing - there is the massfree Aether, or Dark Energy, composed of electric and nonelectric manifestations; there is the world of Matter composed of discrete quanta of mass-energy; and there is the world of secondary massfree energy units, Planckian photons and non-Planckian gravitons.
What are the relations between these elements? The attentive reader will have understood that, in the previous volume, IIA, we laid the ground for a new understanding of photons: in summary, ionizing photons result from the decay of elements of Matter, whereas non-ionizing photons - or more properly speaking - blackbody photons result from the deceleration of massbound charges, from the shedding of energy by kinetic states of Matter. When these kinetic states are conferred by the acceleration which massbound charges experience under an applied electric field, the blackbody spectrum becomes a clue to the underlying massfree electric field responsible for that acceleration, to begin with. This is precisely the theme of the present volume, as it engages our investigative process in search of the nature of the massfree electric Aether, how it affects massbound charges, and how these massbound charges originate blackbody photons when they release the energy acquired from the accelerating field.

In a separate Volume of the Aetherometric Theory of Synchronicity (AToS) dedicated to the Gravitational Aether (Vol. II), we explain how gravitons are secondary productions of the Aether medium local to the elements of inert mass, the elements of Matter, which they literally sustain \[4, 5\]. This, which also constitutes the subject of the penultimate chapter of the present Volume and concerns the creation of the cosmological mCBR, is treated as a process of production of both Matter and associated gravitons, where both particles - the inert mass carrier of a monopolar charge and the massfree graviton - are in a relationship of secondary superimposition (an energy superimposition in phase-Space and phase-Time). Now, this relationship is, from a cosmological viewpoint, the direct result of the more fundamental superimposition of two or more distinct energy units of that primary Aether, specifically, of massfree latent energy in its native state, as it exists in the cosmic ‘vacuum’.

In summary form, then, it is apparent that Dark Energy, whether electric or nonelectric, is massfree energy that may become affected or ‘attached’ (temporarily, of course, as for all natural processes) to particles of Matter, giving rise to the states of motion (the kinetic states) of these particles. Massfree electric energy functions as an electric field, and confers kinetic energy on the massbound charges, the particles of Matter, bathing in that field. And massfree latent energy functions as a phase-superimposition field that, at once, generates and sustains both an inertial structure, recognized as mass-energy, and the associated secondary, massfree graviton, ie the (minimum unit) gravitational energy phase-affected to that mass-energy. So, both photons and gravitons result from the properties, electric and nonelectric, of Dark Energy with respect to Matter. And in a sense, since Matter itself depends upon that secondary superimposition of latent energy, mass-energy is a sort of illusion of the Aether, at bottom, a phenomenon construed by a phase-superimposition of latent massfree energy, or by a specifically-constrained Aether \[4, 5\]. Matter has, therefore, no perennial existence nor any primary right to serve as a foundation of nature. Mass-energy is not a fundamental or primary state of energy. Only the Aether, as such, as massfree energy, has perennial existence - the Aether in all its forms: primary - as Dark Energy; or ‘secondary’ - as Light (photons), gravitons and even Matter. Only the Aether is infinite in existence, only the primary massfree energy is infinite and can serve as primary principle for all natural processes. No photons or gravitons can exist without Matter, only Dark Energy does. Light is not eternal, but ephemeral, and so is Matter.

In the second of our AToS Volumes of theoretical Aetherometry, we formally detail the finite-solution functional mathematics that permit the understanding of the properties of latent energy (that is native
to the so-called ‘vacuum-state’) that produce Space and Time (Synchronicity) in simple and complex superimposition - and demonstrate how Space and Time are directly energy productions of this latent energy, with Matter and its gravitons being solely the result of a secondary form of superimposition. At the end of the present Volume, and in our model of the vacuum-reaction in PAGD and IVAD regimes, it is ‘the medium of Space itself’, massfree latent energy, which undergoes conversion to generate \textit{in situ} massfree electric radiation responsible for the excessive elastic acceleration of the electron plasma [3] and the corresponding blackbody spectrum. Hence, in the same way that the solar blackbody spectrum is a clue to the electric massfree radiation which the Sun emits, or in the same way that the mCBR is a clue to the electric massfree radiation which accelerates cosmological electrons, so is this cosmic electric massfree radiation a clue, in turn, to the processes of superimposition of massfree latent energy in the cosmic vacuum, or inside a vacuum tube. There is a reaction of the vacuum medium that is responsible for Paschen’s Law and which has a varying contribution that explains that Law.

Still another property of latent energy is to generate all those phenomena - meteorological, chemical and biological - that involve so-called latent heat, and refer to massbound states of the nonelectric Aether, such as it is also affected kinetically to molecules. Atmospheric latent heat is the largest reservoir of atmospheric energy that, under certain conditions and by defined processes, is absorbed by molecules of water and transformed into sensible heat, essentially producing thermokinetic states of the atmospheric molecules and more blackbody photons (long-wavelength) [6]. Phase states of Matter are a function of the latent heat ‘absorbed’ by the structure of all molecules. And so-called van der Waals forces, responsible for the noncovalent bonds between molecules - the bonds that all living systems employ for their biochemical processes - and resonant bonds as well, are but the expression of molecular systems for the storage of this latent heat.

Hence, in accordance with a simpler scheme, we can say that massfree energy is subdivided into primordial energy - Dark Energy, electric and nonelectric - and secondary or tertiary energy - the secondary energy of gravitons anchored to the inertial mass they sustain, and the tertiary energy of blackbody photons that results from the deceleration of massbound monopolar electric charges or the shedding of the kinetic energy from inertial particles of Matter. Aetherometry argues therefore that gravitons and photons are massfree energy units, and not units of Dark Energy, or primordial Aether units.
Aether or Massfree Energy Before Matter

- Cosmic Space
- Absolute Time

WORLD OF LIGHT

- Ionizing Photons (Radio Light)
- LFOT Photons (Light & Heat)
- HFOT Photons (Black Light)

Aether or Massfree Energy After Matter

- Dark Energy World
- Primordial Massfree Energy

WORLD OF MATTER & GRAVITONS

- Mass-Energy: Monopolar Massbound Charges
- Non-Covalent Bonds
- Resonant Bonds
- Thermokinetic Drift

MATTER

- Mass-Energy: Particles of Inert Mass

Gravitons

- Decay
- Non-Electric States
- Non-Electric Gravitons

Gravitokinetic States

- Antigravitons
- Annihilation

Electrokinetic States

- Charged Particles
- Electric Charges
- Mass-Energy

Production of Secondary Superimposition Massbound Latent Heat OR (Ambipolar Charges)

Gravitokinetic States

DOR (Ambipolar Charges)

Production of Secondary Superimposition Massbound Latent Heat OR (Ambipolar Charges)

Gravitokinetic States

DOR (Ambipolar Charges)

FIGURE 3
We may, accordingly, and in a sense, consider the totality of energy of the universe as being distributed into massfree energy and mass-energy, into Aether and Matter, where Aether includes all forms - primary, secondary and tertiary - of massfree energy (see Fig. 1).

Or we can instead, and more in depth, consider that the totality of energy of the universe is distributed between Dark Energy (primary Aether) and Matter with its kinetic and emissive states - to which belong not only mass-energy, but also its varied kinetic forms of energy (electric, thermal, gravitational or anti-gravitational), as well as their luminous byproducts (the photons, be they blackbody or ionizing), as illustrated in Fig. 2.

Or we can make a still more spread-out and detailed diagram (see Fig. 3), where it is the relation between the primordial Aether on one hand, and Matter (or mass-energy) and its gravitons, on the other, that gives rise to the superficial world of Light (or electromagnetic fields), the massfree mirror of Dark Energy. All these diagrams are simultaneously true and accurate, for as long as we clearly distinguish between the Aether, the primordial Aether, as Dark Energy, as massfree energy before Matter, as it were, and massfree energy conjugated with Matter - whether it be the gravitons responsible for its weight, or the energy responsible for its states of motion (kinetic energy or kinetons), or the energy shed when these states of motion are arrested (blackbody photons), or the energy resulting from the decomposition of its structure (ionizing photons). All these are forms of massfree energy that are either massbound (gravitons, kinetons) or unbound (eg photons), but constitute, as it were, massfree energy after Matter. Dark Energy, Matter and its kinetic states, and Light (whether thermal, visible, black or radio light) are then the three essential categories of energy distribution. There are therefore no virtual particles, either of Matter or of Light, distinct from its actual particles. It is the entirety of Matter and Light which are at all times virtual - and their very existence, as something actual and finite, is entirely tributary to the actuality and omnipresence of Dark Energy. And perhaps its sense of aesthetics.

The electric Aether as the topic of the present book
This subject of a comprehensive energy model of all physical manifestations - mass-energy, mass-bound kinetic energy and unbound massfree energy - is what brings us to the present Volume. Its scope is a very focused one. It demonstrates - experimentally, analytically and theoretically - how electric massfree energy is produced (in induction coils, in stars, in cosmic vacua), how it can be isolated, analyzed, characterized, what its chemical effects are and how it drives formation of the terrestrial atmosphere and, above all, what its precise continuous spectrum is.

What exactly is massfree electric energy? How is it distinguished from ordinary electricity - the electricity of massbound charges?

Ordinary electricity is mediated by monopolar charges of opposing polarity, and these charges are anchored to inertial mass, permitting physicists to speak of them as particles that carry the charge property. Hence, all monopolar charges are vehiculated by charge-carriers, which is a way of saying that the monopolar charge property is a property of, or is vehiculated by, the mass-energy of the charge-carrier. In this sense, then, the mass-energy of the electron constitutes the inertial charge-carrier that exhibits the monopolar property of a charge which is either negative (negatron) or positive
In Aetherometry, the structure of these material charge-carriers - whether they be electrons or protons, or the traditional ‘neutrons’ - is always toroidal and closed-ended, like a loop. What we call ordinary electricity includes either the electrostatic interactions between opposing monopolar charges, or the fluxes of charges of the same polarity - as ampere currents in closed circuits, as plasma currents in beams, glow and arc discharges, ie in open circuits. There can be no flux of monopolar charges, unless these charges - ie their mass-energy - are affected with an external energy borrowed, for a while, from a massfree field (or portion thereof), so as to constitute their kinetic energy. Hence, motion of massbound charges is always the result of the displacement of their mass-energy under the action of a quantum of associated kinetic energy. The inertia of mass-energy functions as the resistance against which the kinetic energy performs the work of displacement.

In contrast, electric massfree energy - or massfree electricity - does not come in two varieties, positive or negative, but in only one variety - ambipolar. Massfree charges are, so-to-speak, ambivalent with respect to polarity, and not ‘unipolar’ - which is a terrible misnomer. How do we know that ambipolar energy is electric? Aside from the experimental proof presented in the present Volume, the attentive reader or student of Aetherometry, will have noticed that we have already demonstrated in the preceding Volume how charge is a property of linear momentum - whether for monopolar or ambipolar manifestations. Fortunately, nature fixed the value of charge such that we can speak of its universal or elementary value. This value is a resonant constant of linear momentum - and it has the same value whether it is the charge of a proton or of an electron or the ambipolar charge of electric massfree energy. It is, in all cases, the same linear momentum function with the same value or magnitude. The difference is that, whereas that linear momentum function is spin-polarized for the mass-energy toruses of monopolar charges, that is not the case with ambipolar massfree energy where the linear momentum function oscillates in time with respect to any spin-polarization of its wave or current vectors.

Ambipolar energy moves like a radiative field, it flows radiatively - whether through ‘vacua’ or through bodies of Matter. It does not carry any inertial mass, and is therefore not attached or affected to mass-energy. It carries no torus of looped energy along. Ambipolar charges have no charge-carriers, they are rather their own carriers, there being no difference between the energy of the charge carrier and the ‘kinetic energy’ affected to it. It is as if the kinetic energy itself were its own charge, or the charge a property of a purely kinetic energy having constant linear momentum, with its vector rotating in abstract Space.

Now, what is peculiar about electric massfree energy is not simply that it consists of ambipolar charges that function as their own carriers, but that it constitutes an electric field whose waves and electrical momenta are longitudinal cycloidal ones - and not the transverse sinusoidal waves that characterize electromagnetic energy (photons). Indeed, this is what links ambipolar Dark Energy to the longitudinal electric radiation which N. Tesla thought he had discovered in the study of induction coils, and in particular, in the study of the capacitatively-coupled coil that he invented - the Tesla coil.

What Tesla was not able to do, however, was to consolidate - experimentally and analytically - his understanding of this longitudinal electric radiation, and its relation to electromagnetic energy. As it turns out, W. Reich also came to study this ambipolar radiation, though from a very different per-
spective. Reich, too, failed to consolidate - experimentally and analytically - his understanding of this electric radiation. Because he acknowledged that it was massfree, he sought to differentiate it from ordinary electricity, but he was convinced that its particle-structure - or, in our more exacting scientific terminology, its linear momentum function - was not an electric one. Hence, he spoke of orgonotic (or dorgonotic) charges, and failed to realize their intimate electric nature and the neutral phenomenology of their ambipolar manifestations. But Reich's contribution to the understanding of electric Dark Energy is essential because he was able to perceive that this energy had two sets of very different physical, chemical and biological effects, which he treated as formal opposite essences and termed ORgone and DORgone.

However, these distinctions remained prey to mysticism precisely because Reich himself was unable to localize them as a function of a spectrum of ambipolar energy. In fact, Reich did not even ascertain the energy content of the ambipolar massfree continuum, let alone its wavelength and frequency characteristics.

This work of discovery is exactly what our investigation, at the present stage of this Volume, takes on as its task. By applying the fundamental lessons and methods learned from the previous two Volumes, as well as those extracted from the first two monographs of the present Volume - with regard to the magnetic properties of both monopolar and ambipolar charges, and the differential circuit-analysis of their currents or fluxes in induction coils - we finally arrive at a plateau where the methods permit us, at last, to make the identification of the energy continuum of ambipolar radiation, and of the entirety of its spectrum, including the subspectra of OR and DOR. The method is identified using an analytical and experimental model that is applied to both the ambipolar emission from a Tesla coil and to the emission of solar ambipolar radiation responsible for the production of the characteristic solar blackbody radiation; and it is, subsequently, applied to the final analysis of the allotropic cycle of the terrestrial atmosphere, of its fundamental chemical constituents - water, oxygen, ozone and acid ion - in the sequence of the preliminary investigation carried out in the previous Volume; and, finally, it is also applied to explain the production of mCBR from a cosmic background of underlying ambipolar radiation that accelerates cosmological leptons.

What is critical, here, in order to understand the relationship between Dark Ambipolar Energy and the traditional electromagnetic energy of photons, is the aetherometric discovery of the process of production of blackbody photons from the kinetic energy of decelerating monopolar charges. In essence, it is this process that couples the blackbody spectrum to the ambipolar spectrum, and the LFOT (visible light and heat) and HFOT (blacklight) photon subspectra to the ambipolar OR and DOR subspectra, respectively.

To understand the physics of the blackbody production process - which is analyzed in detail, for the first time, in the present Volume - one must keep in mind that, in this respect, one of the critical contentions of Aetherometry is that photons go nowhere, but are born and die on the spot. Accordingly, Light is not transmitted across Space, and it is not electromagnetic energy that propagates from place to place. What propagates from place to place, or across Space in abstract, are not electromagnetic transverse waves, but ambipolar longitudinal waves - or massfree electric fields of Dark Ambipolar Energy. It is ambipolar radiation that transfers the stimulus for the production of Light, from locality to locality where photons are produced with constitutive lags. It follows that the transmission of
Light is a phenomenon mediated by ambipolar radiation, and thus that the structure of the photon is not fascicular (photon-bundle), but globular. In other words, Light is not transmitted electromagnetically, as electromagnetic energy, but electrically, as massfree ambipolar energy.

The present Volume is, therefore, the discovery of a hidden world, the electric world of the primordial Aether, the electric component of Dark Energy - the world which Tesla and Reich had really ventured into, respectively, with their concepts of longitudinal electricity and Orgone. Here, in these pages, all the physical characteristics of this massfree energy manifestation are charted - and the cycle of discovery and scientific characterization completed. It is, in a sense, at once the re-discovery of Tesla radiation and the re-discovery of Orgone energy, a re-discovery which, in both cases, gives the physical detail that both Tesla's and Reich's theories lacked to secure the discovery of a new realm of unsuspected energy.

Few scientists have paid attention to this work, which is convenient neither to conventional, institutional physics, nor to any other existing alternative physical theories - be they 'Teslan', 'Reichian', or 'Maxwellian', etc. But the present Volume constitutes the first time that Tesla radiation and Orgone energy are scientifically isolated and identified, and thus de-mystified. It proves, thereby, just how wilful is the ignorance of an epoch, including that of its 'best' dominant or alternative intelligentsias. If you, the reader, can assimilate the lesson of this work, it may well be said that you have reached beyond your epoch, into a no-man's land which science, to this day, refuses to acknowledge let alone study.

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REFERENCES


