UNDERSTANDING AURAS AND BIOENERGIES

A BASIC INTRODUCTION TO THE AURA

For many millennia of human history, it has been a widespread belief that all objects, especially human and animal bodies, have an Aura (or electromagnetic (EM) field), and that this Aura can be visible to the trained eye. Late 19th century metaphysical science expanded on this concept with the theory that all things possess a body of etheric substance, commonly called the Ethereal Body, which is composed of the higher frequencies of subtle energy and finer pre-matter quantum particles which are intimately bound up with the physical body, as a product of creation of matter by electrofield manifestation through the quantum particles onto the physical plane.

Considering the mechanics of subtle energy fields and energy-matter interactions developed in the late 20th century academic sciences of Bioenergyinformatics and torsion field physics, and given the advanced state of modern scientific instrumentation, it seems both reasonable and logical to conclude that the Aura can be quantified and tangibly studied in an experimental manner. Indeed, since colors of light are defined by frequency, subtle energies and the bioenergy that emanates from all living things can be quantified as electromagnetic field energy that resonates with different frequencies of light.

In fact, much has been learned this century about the light properties of subtle energy fields and Auras from the works of such prominent scientists as the Polish doctor Iodko-Narkovitz, who worked with photo-electricity and electrical field measurement, the Russian inventor Semyon Davidovich Kirlian, who experimented with the qualities and meanings of Auras using photography and electrofield imaging, and the British doctor Walter J. Kilner, who eventually invented a series of goggles and filters through which anyone can see Auras in detail. Many people are also aware

of Harry Oldfield's invention, Polycontrast Interference Photography (PIP), which visualizes patterns of light radiating from biological organisms and inanimate objects. In fact, currently the list of inventions using subtle energies as treatments and subtle energy detectors is so long that we could not possibly discuss them all here in this Manual. In this Manual we focus on **RFI**, which is a process that will introduce you to subtle energy detection and the exciting new field of bioenergy science, also commonly called bioelectromagnetics.

For the purposes of university level scientific research, the presumption of the existence of the Aura can be based upon the principle that all mental activity involves electrostatic or electromagnetic energy-information exchange. While medical theorists tend to argue that mental activity is merely chemical, because of the chemical neurotransmitters involved, the fact is that neurotransmitters are created only when electrical impulses induce a voltage in a neuron that exceeds the firing threshold of that nerve. In addition, EEG (electroencephalogram) technology shows that mental activity can be effectively analyzed and monitored entirely by electromagnetic principles.

In electrical engineering, it is an established principle that all electrical currents moving through a wire produce surrounding electromagnetic fields. Accordingly, when our psychological and emotional energies are sent throughout the body as electrical impulses along the biological (neural) and energy (meridian) pathways, these transmissions cause electromagnetic fields to radiate outside the body. By this process, the tangible features (frequency, waveform, etc.) of these radiating electrical field energies are characteristic of the mental activity that generated them, as much research in this field has revealed.

Indeed, even the mere movement of atoms will produce a quantifiable electromagnetic field. This is most clearly observed in the case of charged radioisotopes, but even neutral atoms and molecules will emit a field through valence motion of the charged substructure particles. As proven by Russian Tesla technology experiments in the 1950s, this phenomenon causes prokaryotic organisms to produce an external electromagnetic field, which consists of the combined radiations from millions of molecules in the biological body.

Many researchers in this field believe that complex biological organisms such as humans also produce electrofield frequencies in much the same way, except that in addition to the atomic and molecular contribution, the nervous system and energy meridians play a significant role. The

nerves and nerve synapses carry electrical currents as large as 55 millivolts (mV) for neuron firings, and sometimes as large as 3 volts for motor impulses (to move the muscles), which radiate much larger electrical fields in accordance with electrofield physics. All of these radiating fields, classified as bioenergy, are the very tangible essence and definition of the human Aura.

Many scientists and doctors have been particularly intrigued by metaphysical scientists' claims that the Aura's energy-information can be used to accurately analyze a patient's psychological and emotional states. This claim is better understood and fairly well supported by discussing some more tangible causal relations. The consulting scientists and researchers at ITEM, while processing nine years of electrical engineering-based research, have found that emotion itself is essentially an energy reaction to a perception. First, one has a psychological perception of oneself and one's environment. This perception, being a mental process, induces characteristic electrical impulses in the brain, which are transmitted to related parasympathetic nerves or endocrine glands. For example, a perception of fear creates specific electrical impulses in the brain that transmits electrical neural impulses to stimulate the adrenal glands. Since the brain is neurologically connected to the entire human body, these electrical impulses may travel throughout the central, sympathetic and parasympathetic nervous system, creating characteristic electrical fields.

Current research further suggests that certain levels of bioelectrical Aura fields are characteristic of the physical status of the biological organism. Biological activity such as autonomic responses initiate cellular and electrochemical changes, thereby creating an environment thermodynamically favorable to the conversion of metabolic kinetic energy into electromagnetic energy. In this process, localized bioenergy "complexes" to form a dynamic field that differentiates according to the neurological information that stimulated it. Since the skin is no barrier for such electromagnetic energy, the bioenergy field can and does radiate outside of the organism to become what we call the Aura.

According to the above biophysics, information about the "health" status of a complex organism is available from the coordination of sub-cellular energies, much the same as in a prokaryotic organism. Any decrease in homeostasis, including parasitic infection, genetic mutation, arterial

constriction, etc., will produce a corresponding modification in the bioelectrical field. **RFI** is an initial attempt to quantify and objectively interpret such modifications.

Thus, the objective scientific analysis of mental, emotional and health states requires a technical understanding of the electromagnetic characteristics of various psychological and biological states, through case study. By mapping the electromagnetic fields surrounding the human body, we have a tangible objective starting point to such clinical analysis.

The Aura is highly characterized and affected by the emotional and physical condition of a person, the biological homeostasis or imbalance of plant life, or the molecular energies inherent in and surrounding an object. This makes the reading of Auras a very useful and powerful tool for the metaphysical and clinical analysis of humans, animals, plants and objects.

Metaphysical energies consist of ambient electrofield subtle energies that carry information. Since the frequency of electromagnetic fields and subtle energy information reveals the type and function of such energies, all metaphysical energies can be identified by their frequency. Since color is defined as frequency, and the Aura is merely an electromagnetic radiation of diverse frequencies, the Aura can be effectively analyzed by identifying which colors are in what part of the Aura.

The color frequencies of light of which the Aura consists are too high to be perceived by the naked eye in most cases. However, the trained practitioner can learn to perceive these frequencies naturally, by activating the Pineal Body and adjusting their brain waves to the higher frequencies of which the Aura consists. Most psychics and metaphysical practitioners tend to see the Aura in six basic colors: red, orange, yellow, green, blue, and purple. Although the Aura itself consists of frequencies higher than those in the visible light spectrum, the electromagnetic energies in the Aura have lower, subharmonic frequencies that resonate with the frequencies of each of the colors of the visible light spectrum. Therefore, although Auras are not visible to the naked eye, the brain may perceive the energies in resonance with certain colors, and thereby construct a quasi-visual (mental) image of seeing those colors. It is precisely in this way that humans sometimes see the Aura, and can analyze its different colors. Those subharmonic frequencies of the Aura is what **RFI** is designed to measure. These frequencies are usually in the range of 100 to 800 MHz (although

they may sometimes be higher or lower than this general range), and generally exist in a range between and within TV and FM waves and moderate to strong microwaves. **Section 5.0** discusses why we are able to measure Aura frequencies to the exclusion of other waves, in all but the most unusual of circumstances.

For all of the above reasons, seeing the Aura and interpreting its colors has been the focus of popular metaphysics for centuries, and "What color is my Aura?" is a very popular game in metaphysical and spiritual circles. However, most people "see" colors that do not match the objective frequency color of the actual Aura. This is because they make a psychological association between the "feeling" of the Aura energy, and what the color "feels" like intuitively. The associated color is then induced magnetically into the visual center of the brain, so the person "sees" that color while looking at that part of the Aura. As a result of this common psychological phenomenon, the vast majority of literature on Auras and Aura colors are entirely subjective to the psychology of the authors, and the purported meanings of the colors are almost entirely arbitrary.

Notwithstanding such human limitations, proper scientific study of electrofield Aura frequencies, and the color frequencies that correspond to the Aura frequencies, can reveal objective and accurate information about Aura colors and their interpretation. Furthermore, it is possible to see the objectively correct colors of the Aura, by channeling the actual bioenergy frequency directly to the visual cortex of the brain. This technical practice of self-brain control can be accomplished by training and practice, using objects and electromagnetic laboratory equipment set to known fixed frequencies. Practicing with such materials as reliable source generators, the practitioner can learn to accurately recognize the objectively correct colors in the Aura. Therefore, while the subjective emotional impressions of Aura color only have symbolic or artistic value, the objective scientific approach to seeing the Aura has practical and clinical value.

Since human visualization of the Aura has an inherent risk of a substantial subjective element that may sacrifice accuracy and detail, ITEM developed **RFI** to eliminate such subjective elements, and legitimize this phenomenon through application of undisputed laws of fundamental science.

Structure of the Aura

All interpretation of the objective Aura colors is conditional upon understanding the structure of the Aura itself. Each part and level of the human Aura is related to different aspects of the person's psychology or physical health, and sometimes reveals an interaction of both physical and mental factors. By understanding the structure of the human Aura, we can study the objective meaning of the Aura colors in context.

It is currently unresolved exactly how many “levels” there are to the human Aura. Clinical studies of the human Aura at ITEM, however, indicate that the metaphysical being of a living incarnate entity consists of four basic Aura Bodies.

The highest of the Aura Bodies is the **Causal Body**, which is traditionally described as our spiritual "higher self" related to our deepest personal identity. Current metaphysical science of the describes the Causal Body as the direct piece of high-frequency universal subtle energy which is given individual consciousness and manifests as an entity which can exist in the physical world of matter. Traditionally called the psyche, or the soul, the Causal Body is the primary subtle energy field that comprises our metaphysical being, and contains our deepest consciousness. The Causal Body may be detected at about 24 inches above the head and shoulders and beyond.

The next identifiable level is called the **Ethereal Body**, which is related to the pre-matter quantum particles which are animated and influenced by the Causal Body’s electrical life-force energies. This body also contains imprints of all the temporal energies and qualities that we acquire while incarnate, and which make up our personality. According to ancient theories of reincarnation, these imprinted energies can later be incorporated into the basic Causal Body if they will be useful for potential successive incarnations. The Ethereal Body reflects our identity, and consists of the more stable average of our general energies. In general, the Ethereal Body can be detected 18 to 24 inches away from the physical body. Because of its distance from the physical body, this level of the Aura plays an important role in how we interact with other people, because it comes in contact with the ethereal energy bodies of others, and participates in mutual energy-information exchange, both projecting and receiving energy.

Some researchers in the field of energyinformatic science believe that the Causal and Ethereal Bodies “cause” the physical body to manifest in space and time. They believe it is the “blueprint” for the physical body, containing instructions to the physical DNA molecules for how to manifest. Such inquiry and investigation, however, is outside the scope of this Manual.

The third, and most clearly identifiable, of the four basic Aura Bodies is called the **Emotional Body**. This is the most useful level for scientific interpretation and analysis, because it is highly characterized by the emotional and psychological condition of the subject. Generally, the Emotional Body can be detected 4 to 18 inches away from the physical body. Because of the wealth of psychological information that can be obtained from this level of the Aura and used to generate a thorough psychopersonal profile, in **RFI** technology it is regularly referred to as the “**Psychological Level**.”

The **Health Level** of the Aura, being the fourth and most tangible of the Aura Bodies, is essentially the subtle energy that radiates from the physical body. This most naturally visible part of the Aura is the bioenergy field that emanates from the cellular, neurological, and other biological functions of the physical body. The Health Level thus reveals the physical condition of the subject, showing disturbances and patterns related to illness or other biological conditions. In general, the Health Level can be detected approximately 0 to 4 inches away from the physical body.

RFI technology is engineered to quantify, analyze and interpret the two most tangible and practically meaningful “levels” of the Aura which are closest to the physical body: the Health Level and the Psychological Level.

Structure of the Chakras

The spatial regions corresponding to the endocrine points along the spine, measured from the front, are also an integral part of the human Aura. These points, traditionally known as “Chakras,” give strong electrofield emanations which appear to “shoot out” in straight forward lines, piercing all detectible levels of the Aura. Aura readings of the endocrine points reveal the person's inherent

and current personality characteristics, or inner emotions and qualities.

The Chakras, or bioenergy emanations from the regions around several points along the spine, are always considered part of the Emotional Body, even when read in the Health Aura level, because they pierce through all levels of the Aura. As established by late 20th century developments in the academic science of Bioenergyinformatics (which are outside the scope of this manual), the energy channels called Chakras are directly related to the physical endocrine system. Accordingly, if a Health Level analysis is necessary, one may assume that a disturbance or imbalance in a Chakra is related to malfunction in an endocrine gland (i.e., over or under-stimulation of the gland).

Taken together, the Chakras are traditionally considered the "nervous system" of the metaphysical body, since it is through them that life energies are received, processed, and transmitted, and through them that body, mind, and spirit are linked together into one holistic system. This traditional conception seems validated in part, because specific glands of the endocrine system of the human body are activated by the frequencies of bioenergy to which they correspond. As a result of the sensitivity and direct responsiveness of the endocrine system to psychological and mental characteristics, events and reactions, Aura readings on the Chakra points have proven to reveal reliable and insightful information about many aspects of a person's mental, emotional and psychological condition, as well as some thought processes.

Current research in psychology and psychobiology supports that the endocrine glands behave in direct response to all mental events, and are thus indicative of a person's mental and psychological condition. Since the endocrine glands are stimulated by, and correspond to, specific identifiable frequencies, and color is frequency, ITEM has used them as a starting point for objective interpretation of the precise meaning and significance of various colors. Medical and clinical psychobiology data clearly illustrate the meaning and significance of endocrine activity, and the endocrine activities are clearly directly related to objective color frequencies.

To summarize, the energy-information frequencies found in the Aura are identical to those found in the Chakra channels. In addition, the Chakra channels emanate bioenergies that are responsive

to and indicative of the activity and condition of the corresponding endocrine glands. The endocrine glands, in turn, are directly influenced and stimulated by psychological and somatic events and conditions. As a result of these mechanics, there is a firm, credible, scientific basis for relating bioenergy colors of the Aura to specific psychological and medical conditions or events.

It is also interesting to note that intensive experimental research has shown that the color frequencies related to the Chakra channels over the endocrine points are identical to the basic primary colors traditionally "seen" by psychics, and currently detected by other Aura imaging technologies.

The exact number of Aura colors and Chakra colors is currently unresolved. Traditionally, there are seven primary Chakra colors, which are used as a basis to interpret all Aura colors. As there is an infinite number of frequencies, and color is frequency, there are theoretically hundreds of other colors and shades of colors of Chakra energies. For this reason, in popular literature there are many different claims, insisting upon one or another of various "correct" numbers of Chakras or related Aura colors. In reality, there is a theoretical infinity of different colors of bioenergy and subtle energy. Nonetheless, only the seven basic Chakras have precise color-frequencies that are known to affect the endocrine glands, and thus all other colors can only be based upon mere philosophy and conjecture, and as such are incompatible with and useless to an objective scientific system of bioenergy and biofield analysis. For this reason, there may be other additional or intermediary Chakras, but they would not operate at the correct frequencies to interact with the physical nervous system and endocrine glands. Therefore, these intermediary Chakra energies or colors would be merely symptomatic or diagnostic based on case study, but not functional for verifiable interpretation.

While **RFI** uses a total of 15 colors, representing all distinguishable colors of the optical spectrum, only seven of these verifiable color frequencies are related to the Chakra system. The seven primary Chakras measured by **RFI** are characterized as follows:

The **Base Chakra**, located in the genital area, has an energy-information frequency that corresponds to the color **red**. The Base Chakra affects the ovaries and testes as glands. Its energies are experimentally associated with sexuality, self-identity, and purely physical or material energies.

The **Sacral Chakra**, located above the genital area just below the navel, corresponds to the color **orange**. The Sacral Chakra affects the adrenal glands, specifically the adrenal medulla. Its energies are associated with healing, generation of life force, and physical vitality.

The **Solar Plexus Chakra**, located around the navel, corresponds to the color **yellow**. The Solar Plexus Chakra affects the islet cells of the pancreas as glands, as well as the physical nervous system. Its energies are associated with calmness and emotional stability, or the lack thereof.

The **Heart Chakra**, located at the center of the chest in the heart area, corresponds to the color **green**. The Heart Chakra effects the adrenal cortex, thyroid, and anterior pituitary glands, thus effecting biological manifestations of emotion, and controlling hormone secretion in the whole endocrine system. Its energies are associated with deep emotions and love, or strong emotions in general including trauma.

The **Throat Chakra**, located at the center of the throat, corresponds to the color **blue**. The Throat Chakra effects the thyroid and parathyroid glands, and its energies are associated with communication, both expression and listening.

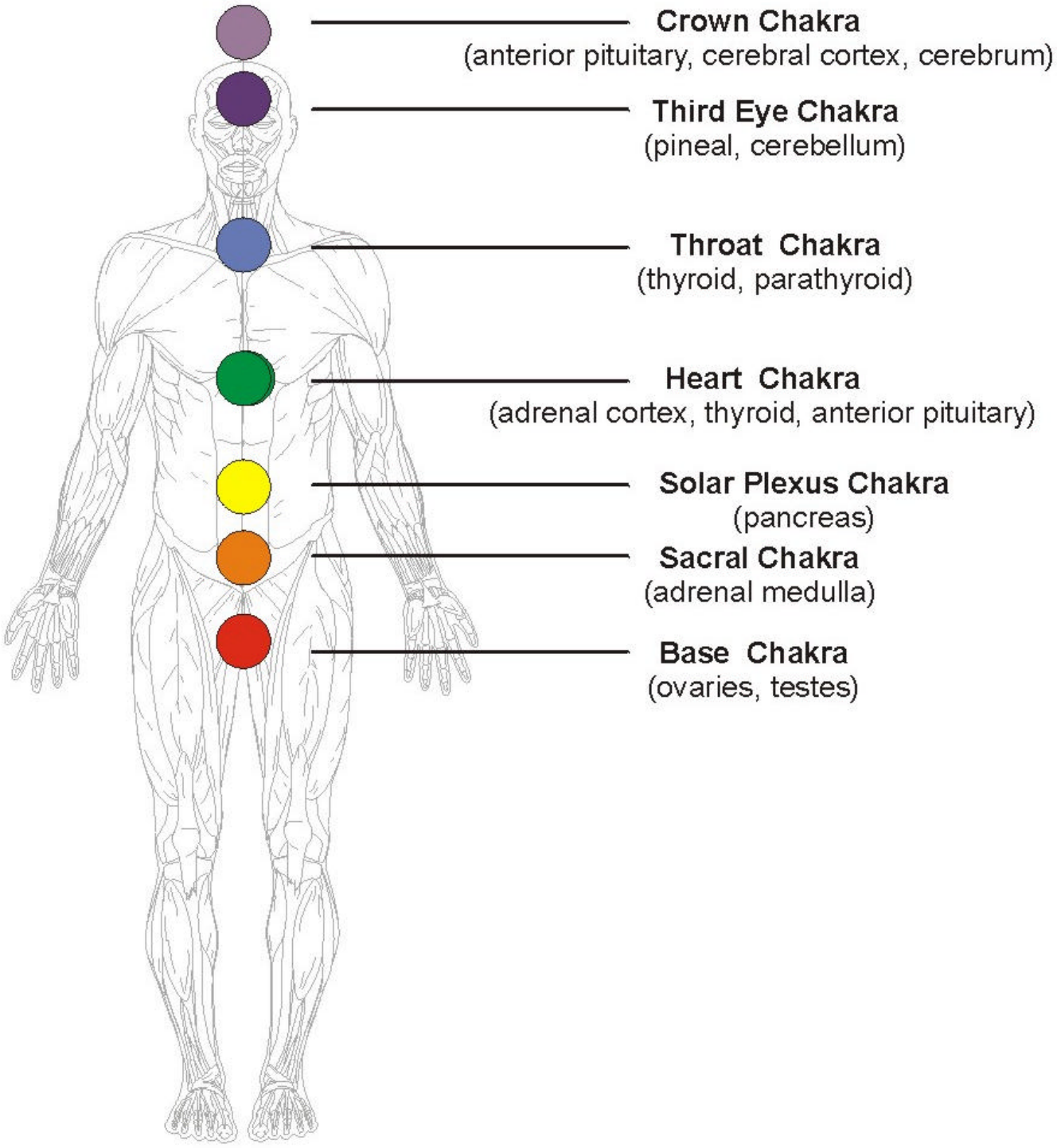
The **Third Eye Chakra**, located on the center of the forehead between the eyebrows, corresponds to the color **purple**. The Third Eye Chakra affects primarily the pineal gland, as well as the cerebellum, and its energies are associated with clairvoyance, sensitivity, intuition, and intellectual activity.

The **Crown Chakra**, located directly above the head, corresponds to the color **orchid** (a very light

purple, or violet). The Crown Chakra affects primarily the anterior pituitary gland, as well as the cerebral cortex and the cerebrum. Its energies are traditionally associated with the higher metaphysical self, spirit, and divine consciousness.

A Chakra system that conforms to the primary colors indicated above is generally considered to be "in balance" in popular metaphysical thought and in energy medicine. However, you will find that it is unusual to find a Chakra system resonating at light frequencies corresponding to the primary colors. Often, intermediate colors (e.g., rose, navy, gold, etc.) are found in the Chakra system, or the Chakras may be resonating at a different color than the primary color traditionally associated with it. This is completely natural, and highly dependent on the way the subject interacts with the environment. The **RFI** software program provides interpretations for all Chakras and the colors that they are currently resonating with, regardless of whether or not the individual Chakra or Chakra system is "in balance" in the traditional sense.

ITEM's textbook, ***Lectures in Energyinformatic Science: A Two Month Program in Energy Medicine***, which is Step 2 of ITEM's Professional Development Series (PDS) in Energy Medicine, contains further discussion on the scientific principles of Chakra mechanics. A transcript of some relevant portions of this textbook is reprinted in **Section 7.0**.

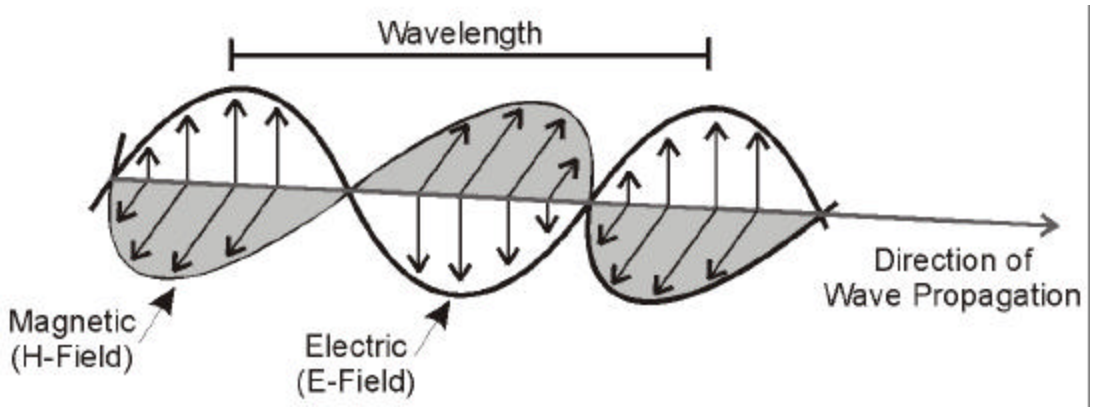

Crown Chakra
(anterior pituitary, cerebral cortex, cerebrum)
Third Eye Chakra
(pineal, cerebellum)
Throat Chakra
(thyroid, parathyroid)
Heart Chakra
(adrenal cortex, thyroid, anterior pituitary)
Solar Plexus Chakra
(pancreas)
Sacral Chakra
(adrenal medulla)
Base Chakra
(ovaries, testes)

THE ELECTROMAGNETIC PROPERTIES OF BIOENERGY

The intention of this Manual is not to serve as a short-course on the physics of electromagnetism. However, it is important to have a basic understanding of electromagnetic (EM) waves and fields when performing **RFI**. In this section, we will only cover some of the important characteristics of EM waves as they relate to bioenergy and **RFI** measurement.

Fundamentals of Electromagnetic Waves

Electromagnetic radiation travels in the form of waves. The figure below illustrates an EM wave propagating through space. EM waves consist of electrical field (E-Field) and magnetic field (H-Field) components, hence the name "electromagnetic." E-Fields and H-Fields are companions, traveling at right angles to each other and at right angles to the direction of wave propagation, and together they make up the total EM field. E-Field strength is measured in units of volts per meter (V/m), while H-Field strength is measured in amperes per meter (A/m). EM field strength measurements are indications of how many volts or amperes the EM field will induce in a receiving antenna that is one meter long.



EM waves arise as a consequence of two effects: (1) a changing electric field, or (2) a changing magnetic field. Neither stationary charges nor steady currents generally produce electromagnetic

waves. The fundamental mechanism responsible for EM radiation is the acceleration of charged particles. Whenever charged particles undergo acceleration, they must radiate energy. The physiological component of bioenergy (0 to 4 inches from the body), therefore, results from the motion and acceleration of electrons in the body (such as the firing of neurons or in biochemical reactions). The psychological component of bioenergy (4 to 18 inches from the body) results from the perceptual responses of the brain and, fundamentally, the mental activity of the "mind."

EM waves such as frequency modulation (FM radio) waves or amplitude modulation (AM radio) waves carry information electrically in the form of sound. In a similar fashion, EM waves radiating from living organisms or non-living objects carry information corresponding to the function, intent, and status of the source transmitter (cells, tissues, mental projections, non-biological matter, etc.).

Frequencies and the Electromagnetic Spectrum

EM waves propagate in air in straight lines at the speed of light. The speed of light has been determined experimentally in a vacuum to be 3×10^8 meters per second (m/s). The speed of light in media other than a vacuum decreases depending on the "permittivity" of the media, however 3×10^8 m/s is frequently used as an approximation of the speed of light in air. The frequency and wavelength of EM waves are related by the expression, $c = f\lambda$, where c is the speed of light, f is frequency (measured in Hertz (Hz) or s^{-1}) and lambda (λ) is wavelength (measured in cm or m). Wavelength is the distance between wave peaks or crests, as shown on the figure on the previous page. Frequency is a term describing the rate of wave motion, measured by determining the number of wavelengths moving past any point per second.

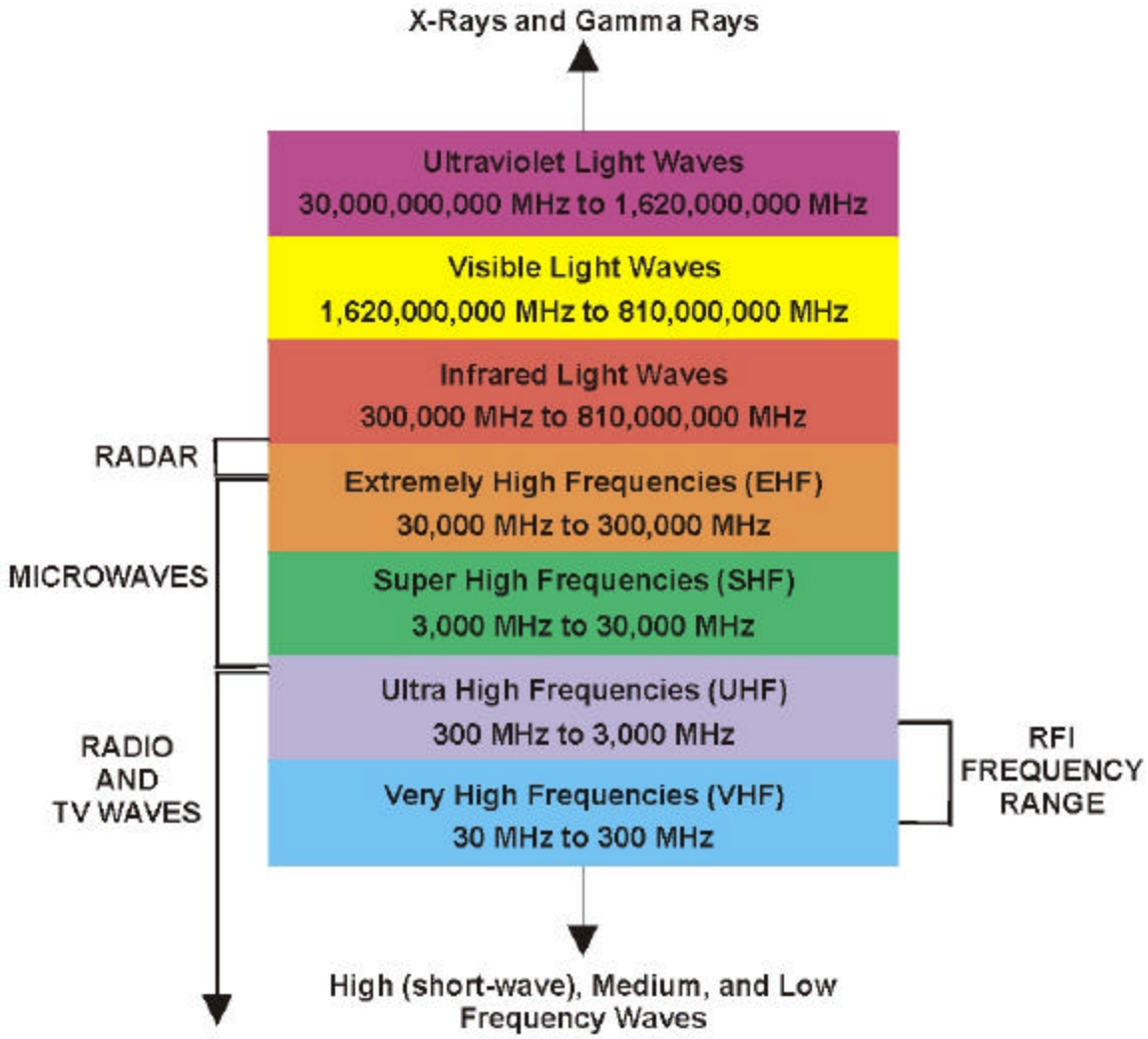
If, for example, you identified a frequency of 500 Megahertz (MHz, or 10^6 Hz) when performing an **RFI** measurement, you could easily determine the wavelength by rearranging the expression as follows:

$$\lambda = c/f,\ \lambda = (3 \times 10^8 \text{ m/s})/(500 \times 10^6 \text{ s}^{-1}) = 0.6 \text{ m or } 60 \text{ cm (about 2 feet)}$$

Alternating current (AC) power generates EM waves with the electric and magnetic fields fluctuating in the form of sine waves. Electric power generated in North America is 60 Hz AC, while in most areas outside of North America power is generated at 50 Hz AC. The wavelength of 60 Hz AC power is nearly 6,000 km. Biological organisms also generate EM waves through AC, as the electrical current that is moving through the body is constantly changing and reversing direction. Researchers have found, for example, EM wave emissions associated with a changing current in muscle tissue, which is due to the bi-directional charge pulse in motor neurons. The great difference, however, between electric power transmission lines and the body's neural network is the voltage that is being conducted; transmission lines carry charges measured in kilovolts, while neurons carry charges measured usually in millivolts.

All EM waves are components of the broad electromagnetic (EM) spectrum. An abbreviated version of the EM spectrum is shown below. It should be noted that there is no sharp division between the various classifications of EM waves; the graphic represents a common way that scientists and engineers categorize these waves. Visible light comprises a small fraction of the EM spectrum; unless we have trained our sensory pathways to see beyond the visible light range, our eyes can typically only focus wavelengths that are 400 to 700 nanometers (10^{-9} m).

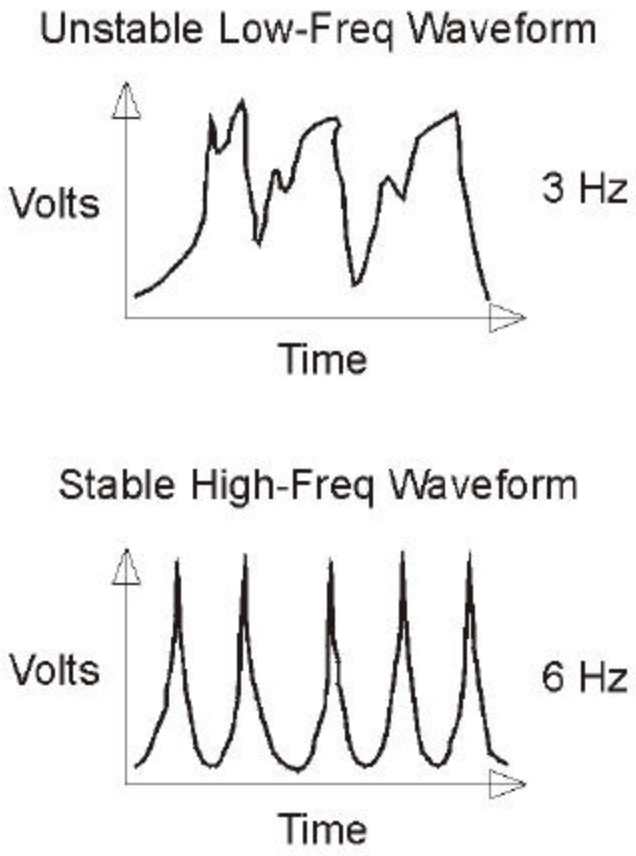
From the illustration, it can be seen that the range in which we collect frequency measurements for **RFI** purposes, generally 100 MHz to 800 MHz, overlaps UHF and VHF, and is within the general range of radio and television waves. **Section 5.0** discusses how we are able to measure bioenergies in the midst of these other frequencies.



EM Wave Shape and Stability

EM waves can appear to take on various shapes as revealed through instruments such as oscilloscopes. The shape a wave takes depends primarily on the electric potential, or voltage, of the source transmitter, and how voltage changes over time. The classical sinusoidal shape ("sine wave"), reveals smooth, continuous fluctuations in voltage. If the voltage changes rapidly, then does not change for a brief period, and then changes again rapidly, the result can be a "square wave." Then there is another type of wave where the voltage gradually increases, and goes up slowly, and then suddenly drops vertically down instantly. That creates a shape known as a

"sawtooth wave," because it literally looks like little teeth on a saw. However, using analytical techniques such as Fourier analysis that reduce or attenuate the effect of rapid increases or decreases in electrical strength, it has been shown that all EM waves are fundamentally sine waves.



The stability of waveforms is a function of how uniform or predictable the changes in voltage are over time. Industrial transmitters are designed with transistors and capacitors that help produce continuous fluctuations in voltage. The result is usually a sine wave pattern that is generally stable for some distance after being transmitted, but may become unstable upon encountering outside obstacles. Research into the electrical properties of the human body has revealed that somatic cells (i.e., non-neural cells) also serve as capacitors, and electrical fluctuations are generally gradual, producing EM waves in the shape of sine waves. Conversely, neurons will generate more of a sawtooth-shaped wave, since there is a gradual increase in voltage until the firing threshold – after which a rapid decrease in voltage occurs. Both types of transmitters, somatic and neural cells, have non-random, predictable electrical fluctuations over time, which generate stable waveforms.

The graphic to the left above depicts two EM waves. The one on top is an unstable, low frequency wave. The one below is a stable sawtooth wave of relatively higher frequency. The unstable wave is generated through random or unpredictable voltage fluctuations of the transmitter. If these two waves were traveling in opposite directions and collided, eventually the more stable, higher

frequency wave would induce the unstable frequency to come into phase with it, eliminating any instability, as discussed further in the section on **Resonance and Entrainment**, below.

EM Field Intensity

Power is the rate of energy transfer over time. Radiated power is that power given off by a radiation source (i.e., the body of a living organism, a transmitting antenna, or even a charged object) and carried through space by EM waves. Power is measured in watts (W). Power density, or intensity, is the amount of power distributed over a given unit area perpendicular to the direction of travel, and is commonly expressed in terms of watts per square centimeter (W/cm^2). As a wave propagates out from the source, the total energy radiated from the source remains the same, but the intensity of the wave decreases as the distance from the source increases. This is due to the fact that the amplitude or the "size" of the waves increases as the distance from the source increases, causing the energy to spread out over larger and larger areas; therefore, the energy per unit area, or the intensity, decreases. For line sources such as electrical transmission lines and directional antennae, the intensity of EM fields decrease at a rate inversely proportional to the distance from the source (1/distance). For point sources like appliances and non-directional radio towers, the intensity of EM fields decrease at a rate inversely proportional to the square of the distance from the source ($1/distance^2$). In addition to the theoretical reduction in intensity as a function of the distance from the source, EM waves also lose intensity by resistance offered by the atmosphere, and by encountering obstacles such as buildings, trees, etc. There are many intricate calculations that electrical engineers use for calculating "free space loss" of EM waves, as designs of transmitters must include ways to compensate for these losses.

The following table presents a listing of the most commonly used broadcast frequency ranges in the United States, and the maximum power used to broadcast these waves. Frequency ranges and transmitted power used in other countries generally resembles those shown in the table.

Frequency Range	Maximum Power Transmitted in Any Direction	Service
0.53 – 1.6 MHz	50 kW	AM Broadcast
54 – 88 MHz	100 kW	VHF TV Channels 2-6
88 – 108 MHz	100 kW	FM Broadcast
174 – 216 MHz	325 kW	VHF TV Channels 7-13
150 – 900 MHz	100 W	Dispatch Radio (fire, police, military, etc.)
470 – 800 MHz	5 MW	UHF TV Channels 14-69
800 – 900 MHz	600 W	Cellular (analog)
1900 MHz	100 W	Personal Communication System (PCS)

For amateur radio operators transmitting on low frequencies, in general the power output is only 0.1 to 1 W. In comparison, the human brain transmits approximately 20 to 40 W of power, and each neuron transmits approximately 2 nanowatts (10^{-12} W).

The power density and strength of EM waves following transmission decrease substantially for the reasons discussed above. By the time the signal reaches the receiving antenna (such as your radio antenna), the signal can be so weak that it is unusable. To compensate, both transmitting and receiving antennas are constructed with amplifiers to increase the strength of the transmitted and received EM waves, respectively.

Harmonics

All transmitters emit frequencies that are harmonic to the fundamental frequency it is designed to transmit. For example, if a radio antenna is designed to transmit a fundamental frequency of 100 MHz, the antenna would generate harmonics of 2, 3, 4, etc. times the fundamental frequency, i.e., 200 MHz, 300 MHz, 400 MHz, etc. Lower frequency subharmonics are also generated, i.e., ½, ¼, etc. times the fundamental frequency. These harmonic waves are generated by the electrical circuitry in the transmitter, and are sometimes referred to as “spurious” emissions or “sidebands.” The degree to which transmitters generate harmonic frequencies depends on the output power of the transmitter. Harmonic frequencies are undesirable for most industrial purposes because the generation of these frequencies reduces the intensity of the EM waves with the fundamental

frequency. Electronics engineers therefore design filter devices (e.g., “low-pass filters”) that are placed on transmitters to reduce harmonic effects. Filters allow the transmitted waves to propagate further with sufficient intensity to be tuned into by a receiving antenna. For example, if your favorite FM radio station was 50 miles away, you would not generally be able to receive its signals if not for filters.

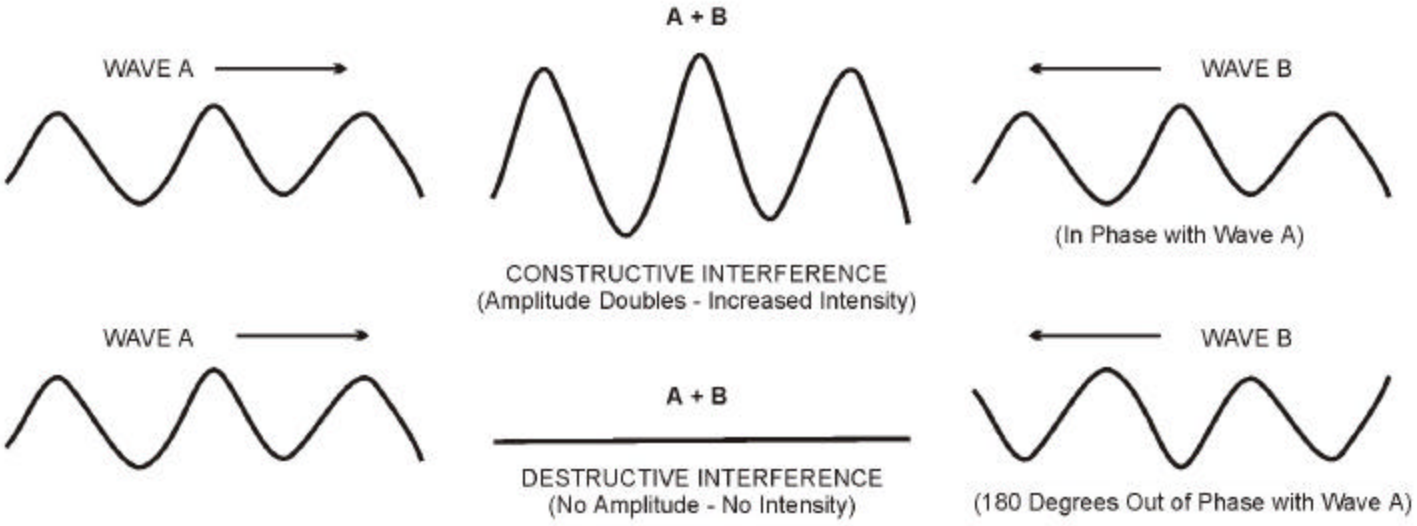
The human body is a transmitter that is not equipped with a filtering device. The electrical and magnetic components of each atom, molecule, cell, tissue, organ, and system (and collectively the body as a whole) change or oscillate continuously, causing a broadcast of fundamental frequencies. Harmonic frequencies are automatically generated in the process, and it is theoretically possible that the harmonic frequencies of the body transmit throughout the EM spectrum. For the purpose of **RFI** measurement, it does not matter whether the detected frequencies are the fundamental frequencies or the harmonic frequencies generated by the body, since all of these frequencies carry the exact same information. The **RFI** frequency counter will detect and display the strongest fundamental or harmonic frequency at a particular location and time.

Interference and Superposition of Waves

From physics, the superposition principle states that when two or more waves move in the same medium, the net displacement of the medium (i.e., the resultant wave) at any point equals the algebraic sum of the displacements of all the waves. If, for example, two waves are traveling in opposite directions and have the same frequency, wavelength and amplitude (size), and are in phase (meaning the crest of one wave identically meets the crest of the other wave), the resultant wave has the same frequency and wavelength, but the amplitude doubles (as does the intensity). This is called constructive interference of waves. If the frequencies are 180 degrees out of phase with each other (i.e., the crests of one wave match the troughs of the other wave), then the waves will cancel (zero amplitude and intensity), a term known as destructive interference. One clear example of destructive interference occurs with sound; two musical instruments on opposite sides

of a room, for example, can emit sound waves that completely cancel at certain notes, resulting in no audible sound. With destructive interference, at the point of wave cancellation there is no intensity that can be measured; however, the energy in the form of the electric and magnetic fields is not affected – instead of traveling perpendicular to the wave, the energy is now directed parallel to the wave.

The illustration shown below is a simple example of constructive and destructive interference. In our normal everyday environments, however, things are not as simple. We exist in a sea of various EM waves that are continuously interacting and interfering with each other. Living beings transmit EM waves with numerous frequencies and strengths, and these interact with EM waves traveling throughout our environments that have multiple frequencies and strengths. The practical



result is a "boundary layer" of interaction between the person and the environment, in which waves are constructively and destructively interfering to various degrees, until a resonance, or equilibrium, is achieved (as discussed in the next section). Have you ever been in the presence of someone and feel extremely "energized" or "in tune" with that person? This can be explained to some extent by the principles set forth in this section. The person's EM field may interact with your own and cause constructive interference, amplifying your own EM field. Conversely, if you were ever in the presence of someone who "brought you down," a likely reason is that there is

some level of destructive interference occurring in your EM field as a result of this person's presence.

Resonance and Entrainment

You have probably heard that an opera singer can shatter a glass, or maybe you have even seen it happen. How is this possible? Everything, from glass to concrete to the human body has its own fundamental frequency – the frequency at which it is naturally vibrating – also called its resonant frequency. Everything also vibrates at frequencies that are harmonic to the fundamental frequency. When a frequency outside the object matches the fundamental frequency or a harmonic frequency of the object, resonance occurs, causing an amplification of the vibrations much the same way that constructive interference occurs with waves. The result can be that the increase in vibration reduces the object's structural stability – hence, the breaking of a glass when a singer hits a high enough note to match the fundamental frequency or a harmonic frequency of the glass. In fact, governments test electronics devices to ensure that the frequency it emits does not match the fundamental frequency of the body or a part of the body, which could theoretically result in severe pain, at the least. Some people believe that certain undiagnosed pains are caused by EM waves in the environment that resonate with the body's fundamental or harmonic frequencies.

Fortunately, living things radiate EM fields that can "shield" much of the EM waves in our environments (if we didn't, we potentially could fall ill to even the weakest of environmental EM fields). The reason why this is true is that the Aura transmissions of living things (i.e., the energies transmitted as a result of both physiological and psychological reactions) are in most cases more intense (i.e., higher power density) than external EM waves. The Aura, and particularly the outer "Psychological Level" on the left side of the body, can, by a principle called entrainment, cause weaker external EM waves to come into resonance with it after a period of time. It may be easier for you to think of the Aura "absorbing" these outside EM waves at the "boundary layer" of interaction mentioned above. This principle will be discussed further in **Section 2.2.2**, below.

As a side note, many health agencies and institutions have performed studies into the effects of low strength industrial EM waves on human cells in the laboratory, as a model for those effects on the entire physical body. Single cells, of course, do not emit the same intensity of EM waves as the entire body, and do not have the additional "protection" of a "Psychological Level" (i.e., they emit only bioenergy). Therefore, when such agencies report negative health effects due to industrial EM exposure in the laboratory, the results cannot necessarily be extrapolated to the level of the human being, since single cells have a limited ability to entrain external EM waves. Many researchers believe that as long as a person is generally healthy (physically, mentally, and emotionally), the field strength of the Aura is sufficient to cause entrainment of most industrial EM waves, reducing harmful effects.

An excellent example of resonance and entrainment is the example where an energy healer, such as a reiki practitioner, projects "white light" toward a person with a "disharmonious" energy field. Depending on the experience of the healer and the strength (intent) of the projection, the white light, which is comprised of the theoretical highest frequency (and strength) will entrain the weaker EM field of the patient, eventually inducing resonance to occur, which strengthens the patient's own EM field.

A Simplified Model of the Human Aura

Now that we have discussed some of the important fundamentals of EM fields, we will postulate how our physical bodies, our thoughts, and our emotions generate the two innermost "layers" of the Aura. Here it is important to emphasize that "bioenergy" is emissions from biological processes, while the "Aura" is a field consisting of both biological and emotional/psychological energies. There has been a great deal of research in this area, and many complex theories have been proposed on how living things generate bioenergies. The theoretical model set forth below is highly simplified, but it gives us a working basis for further investigation and discovery. It also assumes that the two innermost layers of the Aura, which we term the "Health Level" and the

"Psychological Level," are the effect of electromagnetic events occurring with the body and mind, and are not the fundamental cause of such events (although such a theory may have merit, discussion of this topic is outside the scope of this Manual). In this model, we shall briefly discuss the basic theoretical properties of the Health Level and the Psychological Level; the mechanics of Chakras are discussed in ITEM's Professional Development Series (PDS).

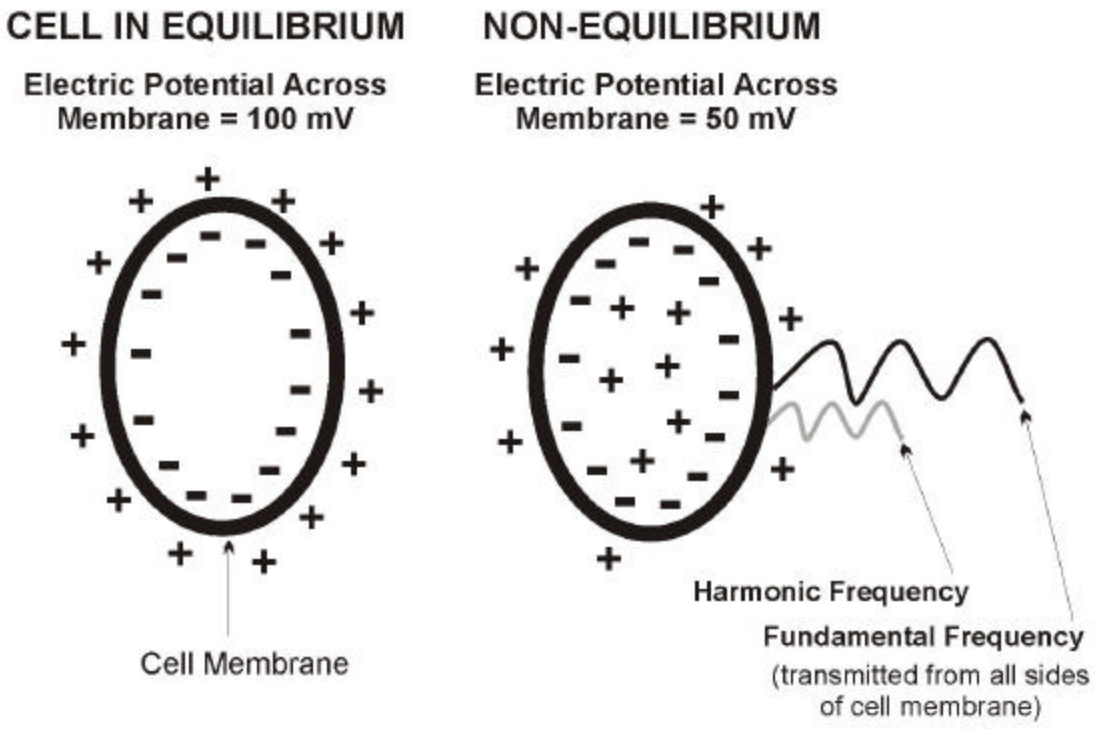
Health Level

It is a well-known fact to the medical community that the body generates endogenous (internal) EM waves through many mechanisms. In medical electronics, these emissions are routinely measured using equipment such as the electroencephalogram (EEG), the electrocardiogram (EKG), magnetic resonance imaging (MRI), the electromyogram (EMG), and ultrasound. However, these endogenous fields are generally considered by the medical establishment to be by-products of biochemical reactions in the body, and not of any significance in and of themselves in diagnosing conditions. The fact that these emissions radiate from the body and form bioenergy is a concept foreign to the majority of medical professionals (especially in the West). This simplified model will reveal how all emissions from the body are informative and reliable indications of the health of the body.

The movement of positive (protons) and negative (electrons) atomic charges and negatively and positively charged ions within the body produce EM waves that radiate for a short distance outside of the body. Such motion on a molecular and cellular level is continuous. One example is the normal flux of ions across a cellular membrane. The presence of charged ions in a cell and in the fluid surrounding the cell sets up a charge distribution across the membrane wall. Normally, there are positive charges outside the cell, and negative charges inside the cell. With this charge distribution, the cell is equivalent to a small capacitor separated by a dielectric (insulator), with the cell membrane acting as the dielectric. The potential difference across the cell membrane can be measured by a voltmeter by placing one probe in the extracellular fluid and one probe inside the cell. A typical "healthy" cell in equilibrium has a potential difference across its cell membrane of

100 mV. During cellular metabolism, excessive positive charges can enter the cell, and the cell subsequently needs to pump out the positive charges to return to equilibrium. It is this changing potential difference across the cell membrane, from a state of equilibrium to one of non-equilibrium, which causes the cell membrane to transmit fundamental and harmonic frequencies.

Fundamental and harmonic frequencies are transmitted by the cell membrane when the electric potential difference changes across the cell membrane; the transmitted frequencies are sent out from all sides of the cell, as if the cell was an isotropic antenna (an antenna that emits waves from all sides). In addition to the frequencies emitted by the cell membrane, generally weaker signals are transmitted by electrical changes that happen inside the cell during the estimated ten million intracellular chemical reactions that occur each second. Even more fundamental than this, however, are the continuous oscillations of charges that occur within the trillions of atoms that compose our bodies. Fundamentally, all atoms are "harmonic oscillators," as termed by many researchers in this field, and emit subtle EM fields. The fields of individual atoms are very weak, but the summation of many weak EM fields results in stronger fields that can be measured with sensitive electronic equipment. In this way, all objects (living and non-living) are fundamentally transmitters of energy-information fields. Our bodies, for example, are comprised of approximately 70% water. Water is composed of two hydrogen atoms and an oxygen atom. A hydrogen atom is known to emit a low-strength fundamental frequency emission at 1420 MHz. If you consider the trillions of hydrogen atoms in our bodies, you can begin to see how the resonance of hydrogen frequencies can produce a signal of detectible strength outside the body. In fact, radio astronomers often tune receiving antennae to 1420 MHz to search for hydrogen in the galaxy as a possible indication of life outside our planet.



The movement of blood through the circulatory system is another way that EM fields are produced. Blood is a carrier for oxygen and nutrients to the cells, but more fundamentally it is a carrier of electrical current. The movement of blood produces EM waves through changes in the electrical charge (voltage) and current (amperage) of the fluid. However, the most notable source of EM wave generation is through nerve conduction. A typical nerve cell (neuron) can experience a change in voltage from 0 (or negative voltage) mV at resting potential to 55 mV at the firing threshold in milliseconds. This fluctuation in voltage is happening continuously, producing EM waves in localized areas. Nerves innervating muscle cells can fluctuate from resting potential to more than 3 V, causing localized EM waves of relatively greater strength. Stronger EM waves are produced by the overall conduction of electric charge through the vast neural network. Similar to AC traveling through a wire loop or solenoid, detectable E-Field and H-Field components are generated, forming EM waves that radiate outside the body.

Theoretically, the E Field strength of the EM waves emitted by cells is generally very weak, i.e., on

the order of 0.01 to 1 mV/m. The electric field strength due to the conduction of charge through the nervous system is usually greater, and may be as large as 100 mV/m when detected near the body (i.e., 0 to 4 inches from the skin).

These are just a few examples of how our bodies generate EM waves. How are these waves characteristic of the body? There are many detailed theories speculating why EM fields are strengthened, weakened, and modified depending on physical and psychological conditions. One simplified way to consider this question is to envision each cell in our bodies as a transmitting antenna. In a state of health, which may be considered "normal" or "natural" fluctuations of electrical charge or current between states of equilibrium and non-equilibrium, or homeostasis (as in the cell membrane example above), the cell uses a certain amount of power (W) and energy to perform its biochemical functions, which is particular to the "type" of cell (i.e., brain cells appear to use more power to perform its functions than, say, liver cells). The "natural" amount of power results in the emission of the characteristic (fundamental) frequency of the cell (with its harmonics).

When an illness occurs, for example, the cells natural fluctuations of charge are disturbed, and the cell must divert some of its power and energy into combating the cause of the illness (e.g., pathogens, changes in metabolism due to decreased nutrient intake, or a number of other causes of illness) to return the cell to homeostasis. The illness causes instability in the natural flux of electrical changes within the cell. The reduction in power used to perform normal cellular functions may reduce the frequencies emitted by the cell. There are also frequencies transmitted by the illness itself; for example, research has shown that pathogens emit frequencies much lower than that of normal, health cells. In some cases, especially when there are localized infections, the body may exert a great deal of power in fighting the illness – in which case, the frequencies emitted by the body may exceed those emitted in homeostasis. Some researchers have even theorized that when engaged in fighting an illness, the body radiates the field that it needs to restore homeostasis (health). There are many variables involved with why and how the body's natural frequencies change due to changes in homeostasis.

Many researchers believe that the atomic, molecular, and cellular emissions radiate only a short distance from the skin. Electrical changes of a larger scale, including those involving muscle activity, appear to radiate further. In general, ITEM has found that bioenergies relating to the "health" status of the body can be identified from 0 to 4 inches away from the skin.

One of the questions that we have not specifically addressed to this point is, "what is the magnitude of the frequencies emitted from the body?" There is no absolute consensus on the answer to this question. In the 1950s and 1960s, Russian scientists did extensive research on the phenomena of endogenous biological EM waves, and concluded biological processes transmit frequencies near and above the visible light spectrum (i.e., ultraviolet). Researchers in Europe reaffirmed this conclusion. Other researchers have asserted that frequencies emitted by living things are generally below 10 KHz. So, why is there such a large discrepancy between these findings? We believe it has to do with the type and level of sensitivity in the detection equipment. ITEM has taken the position that EM waves transmitted by biological processes are indeed just above the visible light spectrum, since many people can learn to visualize the Aura by training the visual circuitry of the brain to decipher smaller wavelengths than those of the visible spectrum (i.e., 400 to 700 nm); to visualize EM waves in the range of Hz or KHz, with very large wavelengths, would be impossible. Assuming then that fundamental frequencies emitted by the body are in the ultraviolet range, **RFI** measures those lower harmonic frequencies in the MHz range.

As mentioned previously in this Manual, the EM waves emitted by the body are believed to be the outward residual effects of underlying torsion fields, or "subtle energy." Einstein used the term *subtle energy* to describe energy that cannot be measured. There is a growing body of research that suggests that the Aura is a body of expanding and contracting "bioplasma," consisting of non-Hertzian energy fields (i.e., energy that is not associated with EM waves). As stated previously, measuring EM waves is currently the most economical way to determine the energy-information transmitted by the body. For a detailed (and rather complex) report on non-Hertzian (scalar) energies, please refer to the work of Dr. Glen Rein, Ph.D. (e.g., "The Scientific Basis for Healing

with Subtle Energies").

Psychological Level

Unlike the Health Level of the Aura, there has been relatively little scientific research into the Psychological Level (i.e., "Emotional Body") of the Aura. In esoteric literature, the living organism is both a transmitter and receiver of information from the environment. The left side of the body is the receiver, while the right side of the body is the transmitter. Energies flow in through the left side, are processed through the metaphysical energy systems of the body (i.e., meridians and Chakras), and then are projected from the right side of the body. ITEM's extensive research has revealed that this theoretical model has scientific validity. We have found that the Psychological Level on the left side of the body serves as an "interface" or "boundary layer" between the person (or any other organism that is capable of thought and emotion) and the environment, and that the Psychological Level on the right side of the body (especially at the hands) can transmit or project EM waves with great intensity. This finding also fits nicely into the neurological model of brain hemisphere lateralization, where the left side of the brain is predominantly active and projects energy (and the left brain controls the right side of the body), and the right side of the brain is predominantly receptive (the right brain controls the left side of the body). For the purposes of this simplified theoretical model, we shall discuss the right and left sides of the Psychological Level separately.

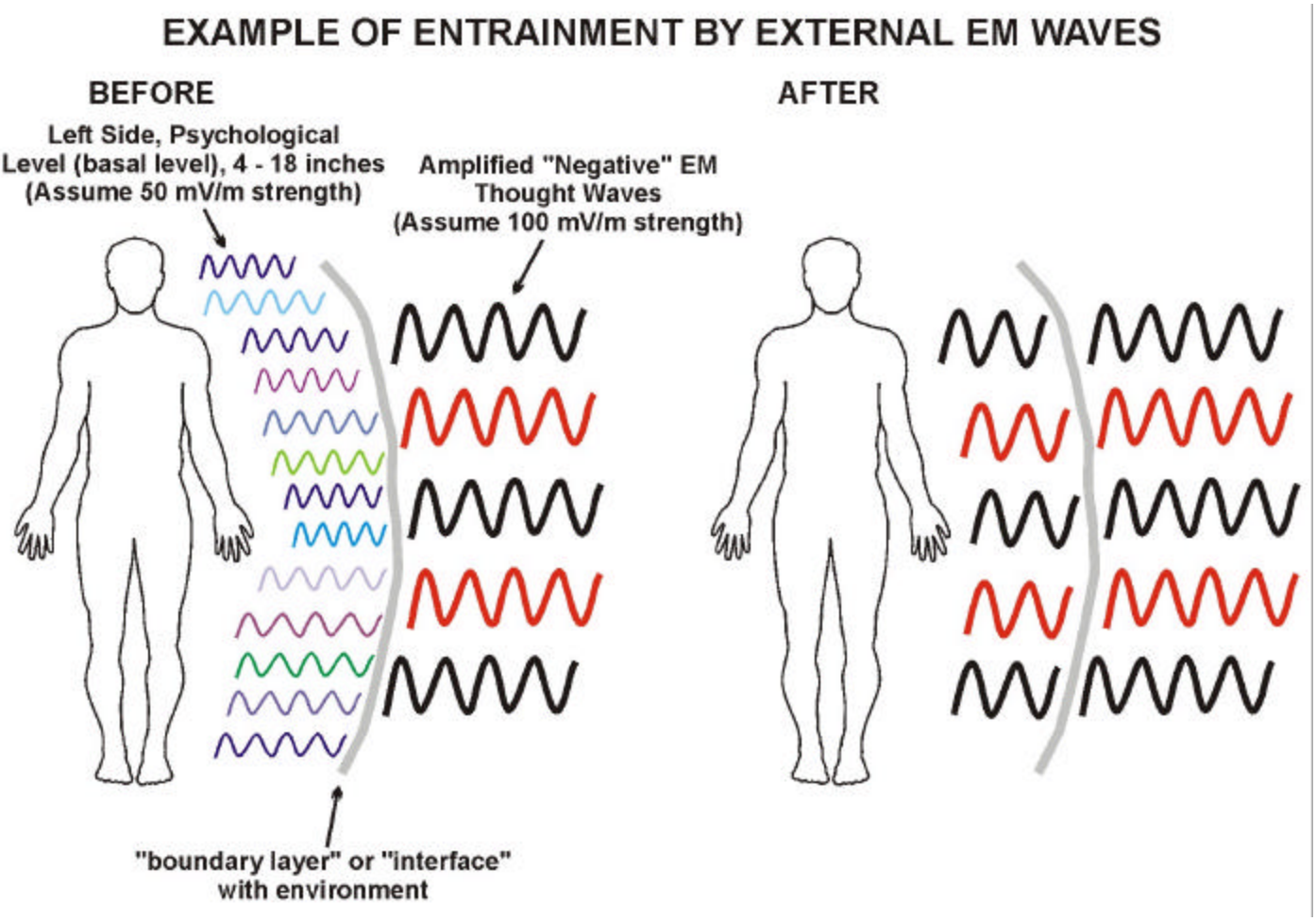
Left Side

Even when we believe we are not thinking of anything in particular during our normal waking state, both sides of the brain are still continuously sending signals throughout the nervous system in response to subconscious stimuli and maintenance of a psychological "state of mind." The EM fields resulting from information processing below the threshold of our usual awareness is our "*basal Psychological Aura*." The "basal" level of the Psychological Aura describes fundamental attributes of the person. For example, if a person is fundamentally happy and content, the "basal"

level will indicate frequencies (and colors) that are representative of a happy and content psychological state, and the same applies to a person is fundamentally unhappy. In general, the more "stable" a person is in a psychological sense, the more stable the basal level; however, even the slightest negative thought by a fundamentally happy person will result in changes to the basal level. In other words, just because a person appears completely "stable" and at peace, you should not assume that their basal Psychological Level is also stable. In meditative states, however, the basal level will generally be more stable than in the normal waking state (due to the subsidence of "ego consciousness" which usually produces "instabilities"). ITEM has found that for most people, the basal level can be measured at 4 to 18 inches from the body. The basal level exists on both left and right sides of the body (since the right and left hemispheres of the brain are active even when we are not actively thinking of anything).

Now we will consider the profound influence the environment has on our basal Psychological Level on the left side of the body. Let us imagine a fundamentally happy person who enters a room full of fundamentally unhappy people – who are concealing their unhappiness and acting as if they were happy. Let us also consider that the unhappy people are transmitting subconscious ideas of negativity (i.e., greed, jealousy, etc.) to the happy person. The negative thoughts of many people may constructively interfere and amplify in relation to the thoughts of each individual unhappy person. The happy person may receive the amplified negative thoughts on the left side of his or her Psychological Level. If the combined strength of the negative thoughts exceeds the strength of his or her basal level, the person will physically "sense" the negativity (even though there are no obvious physical signs of negativity in the room). This is one form of extrasensory perception, and it is due to the interaction of external stimuli on the left side of the Psychological Level. The reason it can be sensed is that the negative thoughts can, after some time, entrain the basal level, which then impedes the natural flow of positive basal energies from the person (see **Example of Entrainment by External EM Waves**, below). However, if the happy person's "basal" level strength exceeds that of the combined negative thoughts, he or she may not perceive it (see **Example of Entrainment by Aura**, below). The converse, of course, is true also – a fundamentally unhappy person may perceive (and be rejoiced by) the combined positive radiations

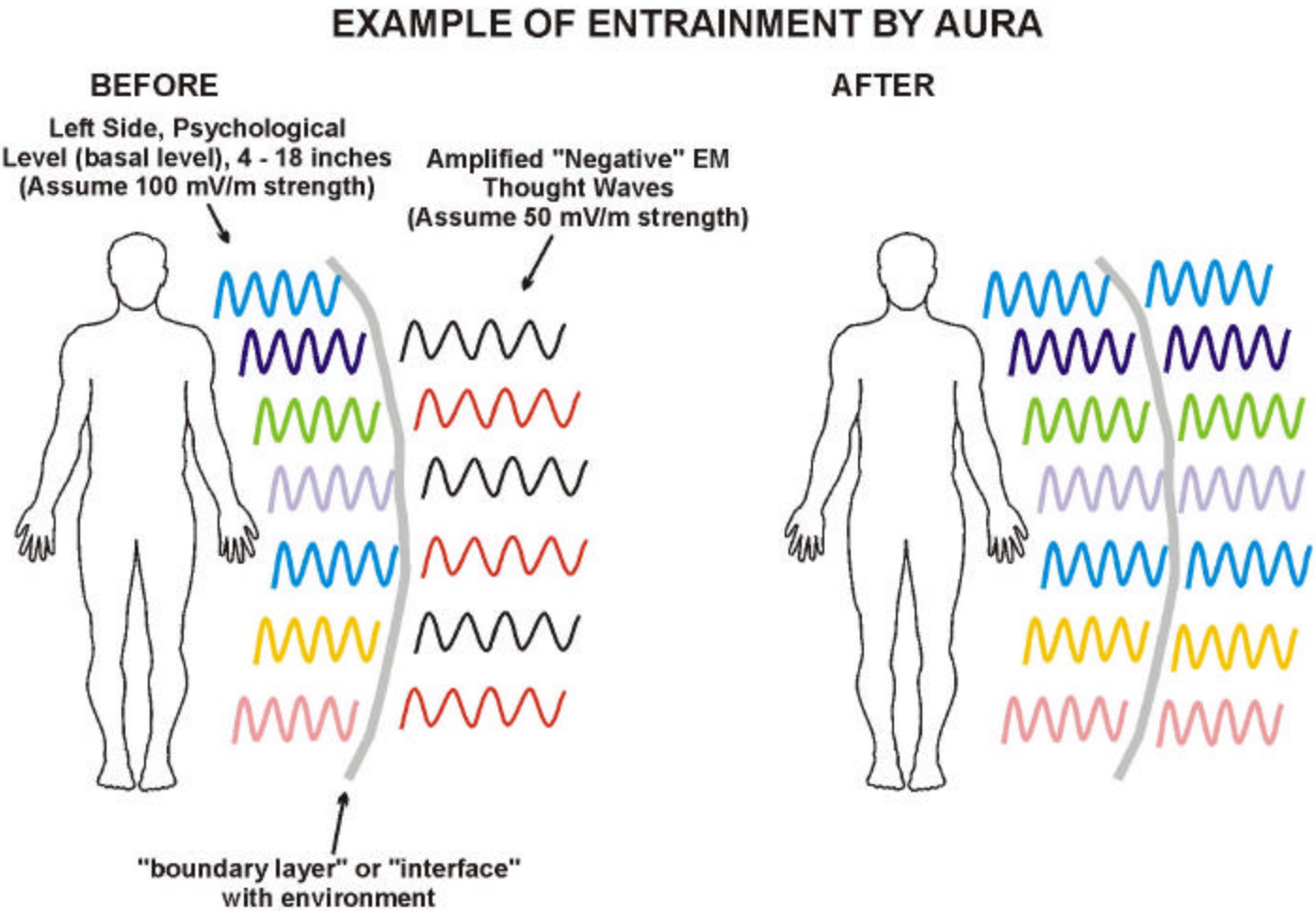
from many happy people, with the result that the positive EM waves entrain the unhappy person's basal Psychological Level.



This is an extreme example of how energies in the environment can affect a person. The interaction occurs at the "boundary layer" or "interface" on the left side of the basal Psychological Level, which acts as a receiving antenna. ITEM has determined that in general, this Psychological "boundary layer" exists at approximately 18 inches from the body.

Practically, however, there are hundreds to thousands of environmental stimuli reacting with the "boundary layer" at any time, ranging from the Auras of other people, bioenergies from plants, trees, and animals, ultraviolet radiation from the sun, and geomagnetic radiation of the earth, to

EM waves given off by electrical appliances and random waves traveling from radio and television antennae. Other researchers using biofeedback modalities such as “galvanic skin response” have shown that the basal level is highly resilient to outside environmental stimuli in most circumstances (i.e., the basal level can entrain external EM waves after a certain period of time, as in the figure below).



An important point to keep in mind here is that we are discussing those environmental stimuli (in the form of EM waves) that are usually below the level of sensory perception. Sensory perception can occur when the strength of those stimuli exceed that of the basal level. Perception occurs more routinely when, for example, you see unhappy people in a room using body language

revealing their unhappy psychological state. That type of perception will obviously lead to a reaction and subsequent transformation of the right side of the Psychological Level, as discussed below.

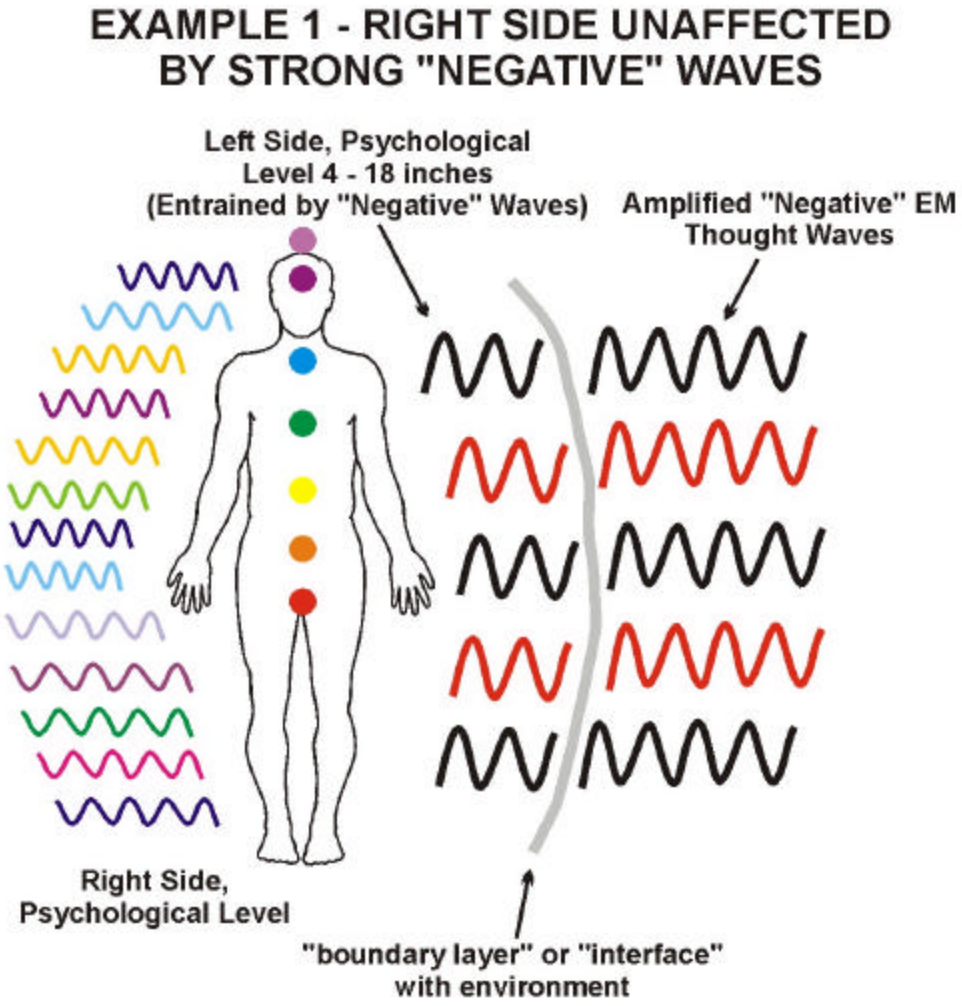
RFI measurements of the left side of the Psychological Level, at 4 to 18 inches from the body, are therefore *revealing a composite and dynamic electromagnetic interaction between the basal level and outside environmental influences*. Assuming that we could construct a filter, such as a Faraday cage, to reduce or prevent the interaction of the basal level with external EM waves, the frequencies that you would detect with **RFI** would theoretically be those of the basal level alone. However, the reality is that we do not exist in isolation from the environment, but depend on and interact with the environment every second of our lives, so collecting any data other than the true interaction of the basal level with the environment would be "unnatural." That is, essentially, why ITEM does not offer or recommend the use of any types of "shielding devices" or filters when performing **RFI** measurements on living organisms such as humans, animals, and potentially plants (higher organisms that are or may be capable of producing EM fields as a result of thought and emotion), except for unusual circumstances of interference.

Right Side

In metaphysical terms, energy flows in through the left side, traverses the energy meridian system of the body, is processed through the main energy "vortices" or Chakras, and is projected back into the environment through the right side of the body (with greater importance on the right hand). Based on years of processing frequency data generated through **RFI** trials, ITEM believes that there is a sound scientific basis for this metaphysical model.

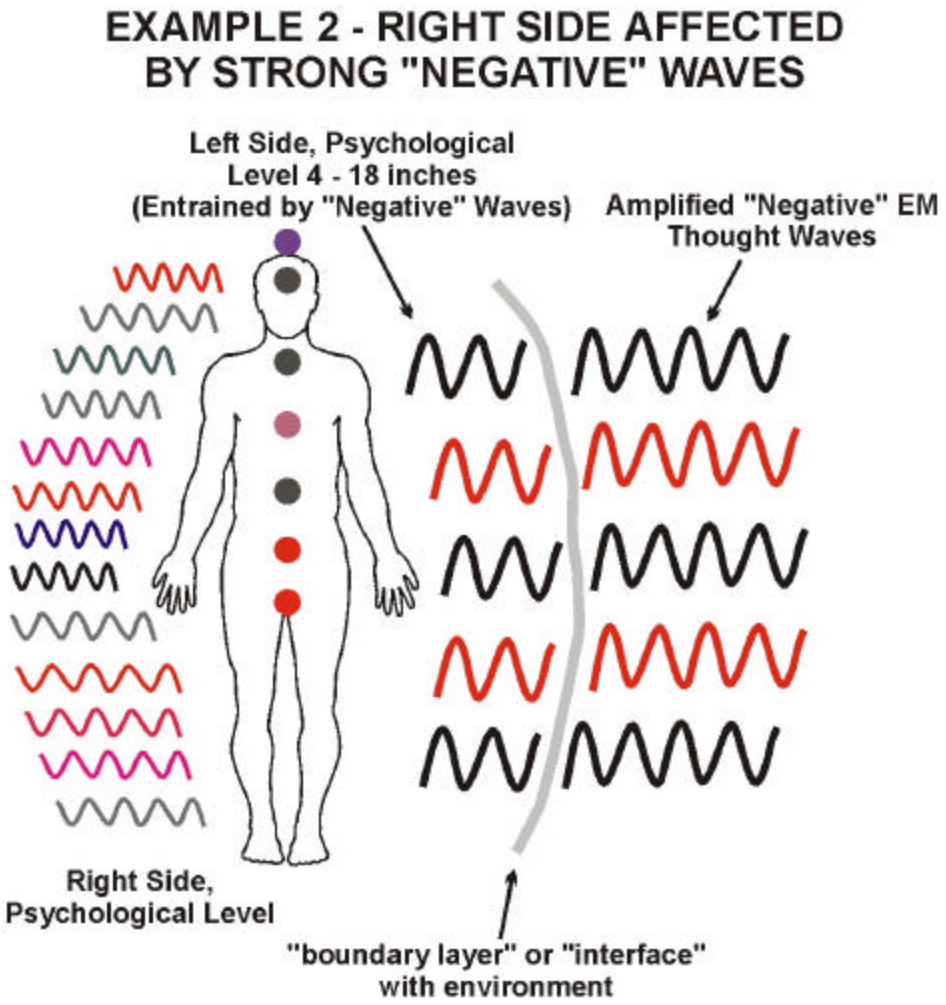
The right side of the Psychological Level is sustained by the basal EM field just as the left side is. If we were to isolate a person from the environment, we may find that the basal level of the right side is generally similar in terms of frequency and field strength as the left side. However, given the reality of our constant interaction with the environment, we find in practice that there will

usually be differences in the field strengths and frequencies of the left and right sides, due to 1) the types of EM waves interacting with the left side, and 2) the ways people process different types of external energies through the Chakras.



Returning to our example of the fundamentally happy person who encounters a stream of amplified “negative” EM waves in a room, we will consider just two of the ways in which the person can process and transmit EM waves back to the environment. In both of these examples, we will assume that the field strength of the external “negative” waves greatly exceeds that of the left side basal level, and thus entrains the left side Psychological Level. In Example 1 above, we see that

although the left side Psychological Level has become entrained, the strength of the new field does not “overpower” the natural momentum of energy flow through the Chakra system, and the EM waves transmitted by the right side are unaffected. What this means, practically, is that the happy person may sense the negativity in the environment around him or her, but it is not sufficient to impede the natural transmission of “happy” and “loving” EM waves back to the environment.



In Example 2, we see that the negative EM waves do have an adverse impact on the natural momentum of the Chakras, and therefore affect the types of energy transmitted from the right side Psychological Level. In general, the momentum of the Chakras and the basal level of the right

side will not permit the direct “pass-through” of negative EM waves from the left side to the right side, so there is essentially a “dampening effect.” In other words, a happy person who senses a great deal of negativity all of a sudden will not usually transmit those negative energies back into the environment with the same strength as they were received (rather, the person sensing the strong negative waves will usually feel uncomfortable and leave the room).

In our normal environments, when we are not exposed to such an extreme, polarized form of energy, but rather diverse arrays of complex EM waves from the environment, our reactions to stimuli as observed from the right side of the body can be just as diverse. The basal level on the right side of the Psychological Level is not only affected by those EM waves “received” by the left side, but also *subtle energies* that cannot be measured and conscious and subconscious thoughts that originate within the person’s mind (and are therefore not subject to interaction with the left side basal level). ITEM has shown that the slightest thought can produce immediate changes in the right Psychological Level. If, for example, during an **RFI** reading the subject sees a butterfly land on the window, the subject may respond with no reaction, a positive thought, or a negative thought, based on the subject’s experience. The stimulus (butterfly) itself will not likely induce any changes in the left Psychological Level (little or no bioenergy EM waves will be received), but the perception of the stimulus will induce the thought which can immediately affect the transmission of right side psychological EM waves.

The left hemisphere of the brain serves as a primary transmitter of EM waves. When a thought or environmental stimulus is perceived, the brain will transmit electric current through the right side parasympathetic nervous system (meridian system), which is then projected outward into the environment from the entire right side of the body (although usually more intensely at the right hand). The brain biochemically uses power to transmit the current, and the amount of power used is a function of the intensity of the response to the sensory perception or stimulus. When a person experiences a very strong emotion or projects a thought with great desire, the intensity and strength of the EM field on the right side of the body will increase, as will its frequency in most cases.

The electric field (E Field) strength of the basal level of the Psychological Level varies depending on an individual's psychology. In general, if a person is fundamentally happy and positive, the E Field strength of the basal level can theoretically be 250 mV/m or higher at any time (although, of course, the basal level is in a continuous state of flux in terms of both frequency and strength). A sustained stimulus of strength greater than 250 mV/m would therefore be necessary to induce entrainment in the left side of the Psychological Level.

When a person projects a thought or emotion of great intensity to the environment, the resultant maximum E Field strength can theoretically be 1 V/m or greater. As discussed in ITEM's Professional Development Series (PDS), such transmitted electric field strengths are necessary to cause the displacement of matter (i.e., telekinesis). When a person transmits EM waves, the basal level on the right side Psychological Level is increased (in terms of electric and magnetic field magnitude). (Note - the expansion and contraction of the outer Aura often referred to in metaphysical literature is most readily understood as the "spikes" in electric and magnetic field strength due to the active projection of EM waves from the right side of the body). In addition, the transmission of EM waves produces a force or momentum, greater than that present in the basal level, which generally results in a more immediate entrainment with external EM waves. In other words, unlike the left side Psychological Level where a boundary layer of interaction may be found at about 18 inches from the body, such interaction on the right side Psychological Level would not occur until much further from the body. Therefore, at 4 to 18 inches from the right side of the body the frequencies detected are the sole result of a person's psychological state, thoughts and emotions (i.e., the right Psychological Aura is composed of the basal level due to fundamental psychological state plus potentially stronger EM wave transmissions from thoughts and emotions).

Although we recognize that this model of the Health and Psychological Levels of the Aura are highly simplified, we hope that **RFI** Investigators can use it as a foundation for further investigation.

Before ending this section, we would like to briefly discuss one other important consideration with

regards to the principle of entrainment. In many esoteric books on mystical experience and mastership, the concept of low-frequency entrainment is discussed. Mystical "masters" often characterize their basal energy fields as being composed of low, stable frequencies. At the time of this writing, an **RFI** Investigator informed ITEM of some interesting findings – before a class on chi (essential energy) mastership, most students had basal energy fields in the 400-600 MHz frequency range. However, following the class, the energy fields of most students had decreased to 10-20 MHz. This finding suggests that the energy field of the chi class instructor entrained and induced resonance in the energy fields of the students. Low-frequency entrainment, like high-frequency entrainment discussed previously in this section, is an established principle of physics and has many applications in music. However, low-frequency entrainment of energy fields, unlike high-frequency entrainment of fields, may have little to do with electric and magnetic field strength but may be more related to non-Hertzian energy dynamics (i.e., the energies we cannot currently measure).

Many **RFI** Investigators ask ITEM a natural question – which is better, high frequencies or low frequencies, in terms of spirituality, self-enlightenment, love, etc.? The answer to this question is theoretical and not enough scientific data exists to declare a definitive and objective solution. For example, some "masters" whose energy field is described as "powerful" radiate relatively low frequencies, while others radiate high frequencies. Many people think, "the higher the frequencies of the energy field, the higher the attainment of consciousness," but this does not appear to be necessarily the case. In fact, one could argue that the opposite is true if we were to consider that as frequencies increase, wavelengths decrease. For example, the wavelength of a 100 MHz radio transmission is 3 meters. The wavelength of the fundamental resonant frequency of the earth (Schumann resonance) of about 7.83 Hz is 38,300 kilometers. The length of a wave of 0.000000032 Hz is one light year. You can soon begin to see that as frequency approaches zero, wavelength approaches infinity, implying that energy information can travel infinite distances and literally exist "everywhere at once." Thus, the theoretical implication is that perhaps the lower a person's energy field is in frequency, the "higher" one is in terms of consciousness – yet this is a philosophical inquiry, of course, and science may never find a definitive answer for it.