

Are psychoenergetic pictures possible?

Dramatic photographs said to show the effect of drugs, alcohol, mental illness, and even psychic healers on the human "aura" have sparked interest among both medical researchers and parapsychologists. Most of the effects actually have simple non-psychic explanations. But for just that reason, Kirlian photography could become an important research and diagnostic tool

William A. Tiller

is professor of materials science at Stanford University

A form of high voltage photography called Kirlian photography has recently triggered considerable interest. First developed by the Soviet scientist Semyon Kirlian, who studied the technique for more than 30 years, psychologists, psychiatrists, biologists and physicists now look on the technique as a unique way of observing energy states associated with living things. Some investigators in the US are already trying to use it as a diagnostic tool to monitor the psychological and physiological conditions of their patients.

Early statements pointing to this technique as being able to photograph the "aura", seen heretofore only by clairvoyants, created a flurry of excitement in parapsychology. Even more extravagant claims have been made about the process based upon very little first-hand information and some wishful thinking by a few not-so-careful experimenters.

The photographs are taken without any light source and result from electric discharges between an object and an electrode. The simplest form is shown in Figure 2. An object to be photographed, such as a leaf or a coin, is placed between parallel metal plates of a capacitor-like electrode arrangement and separated by a small distance from a piece of photographic film (emulsion side towards the object). This is generally carried out at normal atmospheric and temperature conditions. Soviet studies have indicated that for a good picture a spacing of 0.01 mm to 1 mm should be maintained between the object and the film. To photograph a person's finger pad, the arrangement illustrated in Figure 3 is used. A third arrangement uses a transparent electrode upon which the finger pad is placed; the light generated in the discharge process is photographed from a remote position.

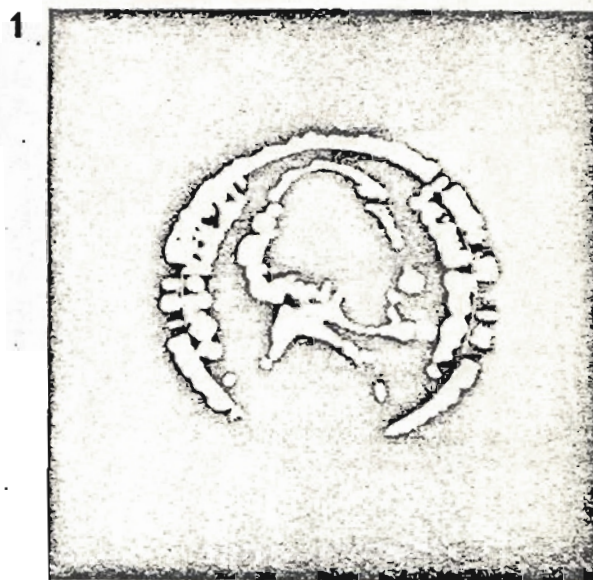
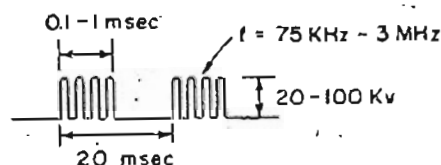
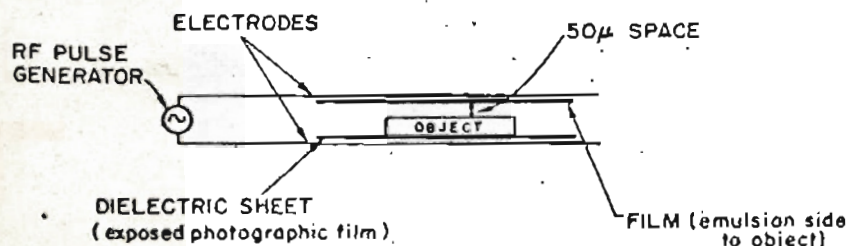


Figure 1 Kirlian photograph of a leaf (by Thelma Moss) and a coin (a US nickel)

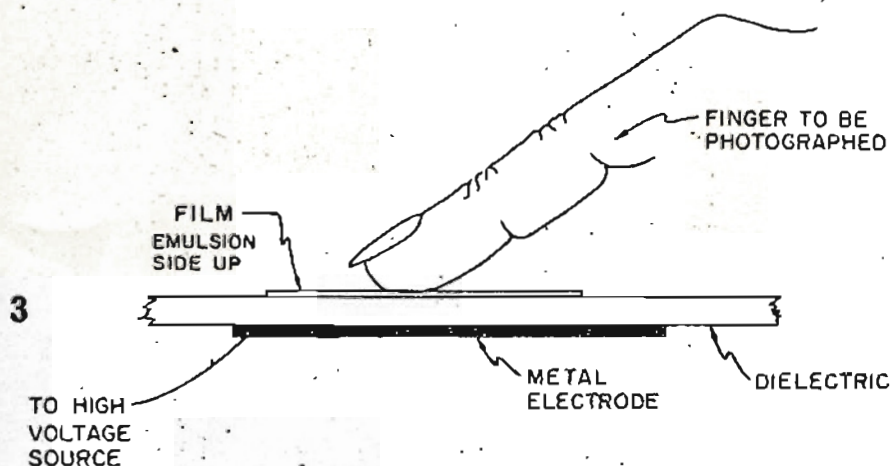


GENERATOR WAVEFORM

Figure 2 Simple Kirlian photographic equipment and waveform using capacitor plate configuration

The Soviets found that it was possible to detect and monitor electronically generated flares and bursts of light emitted from points on the living system or object. From the colour and intensity of the flares, the Soviet researchers said they could deduce relevant information concerning the physical, emotional and mental condition of a human subject. They reported that the technique has found meaningful use in agriculture, medicine, psychology, and engineering.

Thelma Moss, at the University of California at Los Angeles, utilised the single electrode technique and 1-10 kHz pulses to study the effects of drugs and alcohol on the energy emission from finger pads. She has found some remarkable colour (white, blue, red, orange, yellow) and energy intensity effects. The red and blue photo on the cover is of a finger pad. She has also reported effects associated with damaging leaves of plants and the changes associated with their treatment by a healer (laying on of hands). This is described in more detail in the book *Galaxies of Life*, edited by S. Krippner of D. Rubin (Gordon and Breach, 1973). Unfortunately, in these studies no precautions were taken to control either finger cleanliness or finger pressure on the film.



Most other US investigators have been using a similar technique and one pair have been studying energy changes on Kirlian photographs both before and after treatment of schizophrenics and alcoholics. Before treatment, both groups show a marked spatial fragmentation or annihilation of large portions of the normal emission from the finger pad (Figure 4). In addition, the pattern of emission from the contact portion of the finger pad appears quite chaotic. After successful treatment, as indicated by conventional psychiatric criteria, one observes (a) the filling in of the emission pattern around the finger pad, (b) an enhancement of manifested energy intensity and (c) a more orderly and coherent fingerprint pattern on the contact portion of the photographs. Once again, no finger pad cleaning or pressure control procedures were instituted. The pulse length used in this study was 4 to 8 seconds.

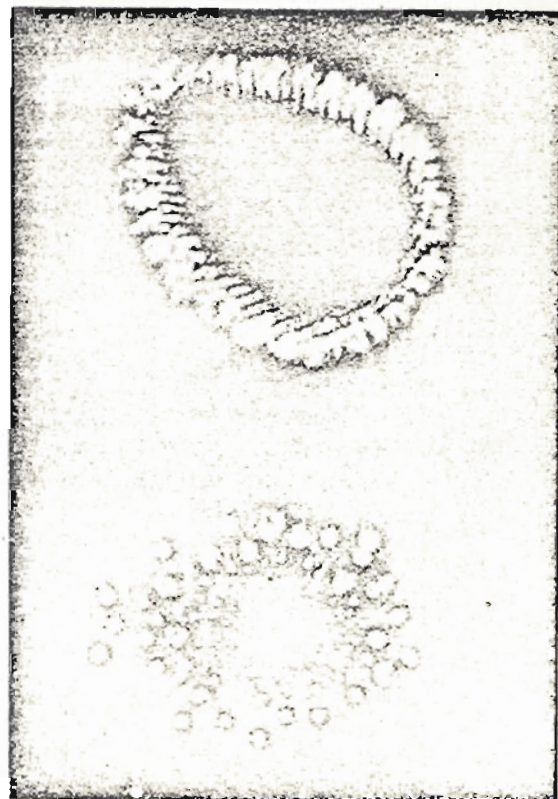
Light generation mechanism

At Stanford, we conducted a number of experiments using a similar electrode configuration to Figure 2 and a high frequency power supply operating at 1 MHz (J. Applied Physics, July 1973). Single pulse discharges from both biological and metallic electrodes

Figure 3 Equipment for photographing discharge from finger pad

Figure 4 Discharge of finger pad of a schizophrenic patient during a psychotic episode (left) and six days later after phenothiazine therapy (right)

Figure 5 Finger pads photographed by different methods: (top), multiple 100 microsec pulses at 20 Hz for 2 sec, and (bottom) single 100 microsec pulse at 1 Hz



were found to occur from a network of points on the electrode surface. Multiple pulses were found to produce a superposition effect such that a uniform "aura" exposure appeared on the film.

During the fingertip studies, it was found that the photograph depended significantly on the electrode-film combination. Considerable variability occurred in these results as a consequence of the inability to repeatedly establish a well-defined and controlled discharge spacing and finger orientation.

Thus, we decided to restrict our initial studies to those where reliable information could be gained, and started by studying discharges between flat, polished metal electrodes (Figure 6).

All the photographs were found to reveal the same characteristic dot discharge pattern with relatively uniform dot spacing. However, in a number of photographs, large clear patches containing no dots were found. These patches disappeared when glass photographic plates instead of film were used.

Looking at streamers

One has only to casually read L. B. Loeb's book *Electrical Coronas* (U. Calif. Press, 1965) to realise that we are dealing here with the corona discharge phenomenon called "streamers". In this process, a few electrons are first produced in the interelectrode space, are accelerated by the field and ionize the air molecules, yielding an exponential growth in the number of electrons and positive ions. The electrons sweep quickly toward the anode (positive) and the cluster of positive ions moves somewhat more slowly towards the cathode (negative). When the positive ion cluster in the air gap reaches a critical density, it strongly attracts the electrons so that a large number of recombination events occur and photons of light are generated to such a degree that the cluster of positive ions is brightly luminous and travels at high speeds. Both positive and negative streamers move between the electrodes so that discrete balls of light move in various directions.

In air at high field strengths, the normal colour of the streamers is a bright blue, since the most frequent radiation is from highly excited nitrogen (N_2) molecules. Ultraviolet (UV) radiation is also produced, and its intensity exceeds that of blue in most cases.

In our studies, some colours other than blue and white were observed with lengthy

discharges, when deposits of organic matter and water vapour were allowed to build up on the transparent electrode. Cleaning of the electrode produced immediate change back to solely blue and white.

People have observed red, orange, yellow and, rarely, even green splotches appearing amongst the blue and white colour, especially after what has been reported to be an emotional or psychic experience. An explanation is easily arrived at by considering the structure of colour film: it is composed of three pigment layers, blue, green, and red in that order, with the blue on the emulsion side and the red adjacent to the film support. We felt that if film buckling or film vibration occurred, streamers would develop between the electrode and the back of the film as well as at the front. What enters the back will expose red and green layers to some degree, providing colour production in the orange range with variations to the red and yellow side depending upon the preponderance of UV or blue light generated by the streamer.

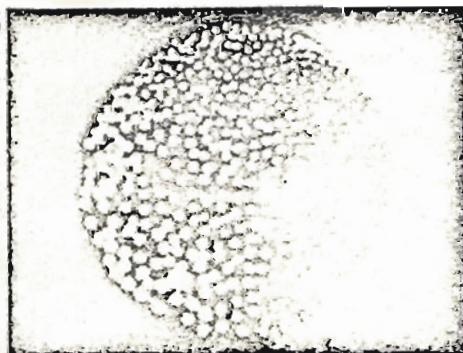
The fact that people using Polaroid film with a stiff opaque backing never see anything except blue and white is consistent with the film-gap postulate. In addition, our experiments with the transparent electrode reveal only blue and white patterns. Finally, a direct series of experiments with UV light entering the back of the film completely confirms that one is able to generate the entire range of colours just by changing the intensity and exposure time. In addition, by using a finger pad in contact with the emulsion side of a colour film and by varying the distance between the driving electrode and the back side of the film, one is able to generate the entire range of patterns and colours reported by anyone in this field.

Rational expectations

Is it rational to hope to observe a non-physical manifestation directly, using only instruments fashioned after the five physical senses? I think not. We can expect only to detect information at the physical level. By nonphysical energies is meant energies of a nonelectromagnetic, nonsonic, and nongravitational variety; energies that do not directly stimulate our five physical senses, and energies that do not propagate in the four-dimensional space-time continuum. There are three categories of devices one may use

Figure 6 Photographs of a single 500 microsec discharge between flat, polished brass electrodes. Left: concentric electrodes. Centre: non-concentric electrodes. Right: non-concentric electrodes with local film buckling

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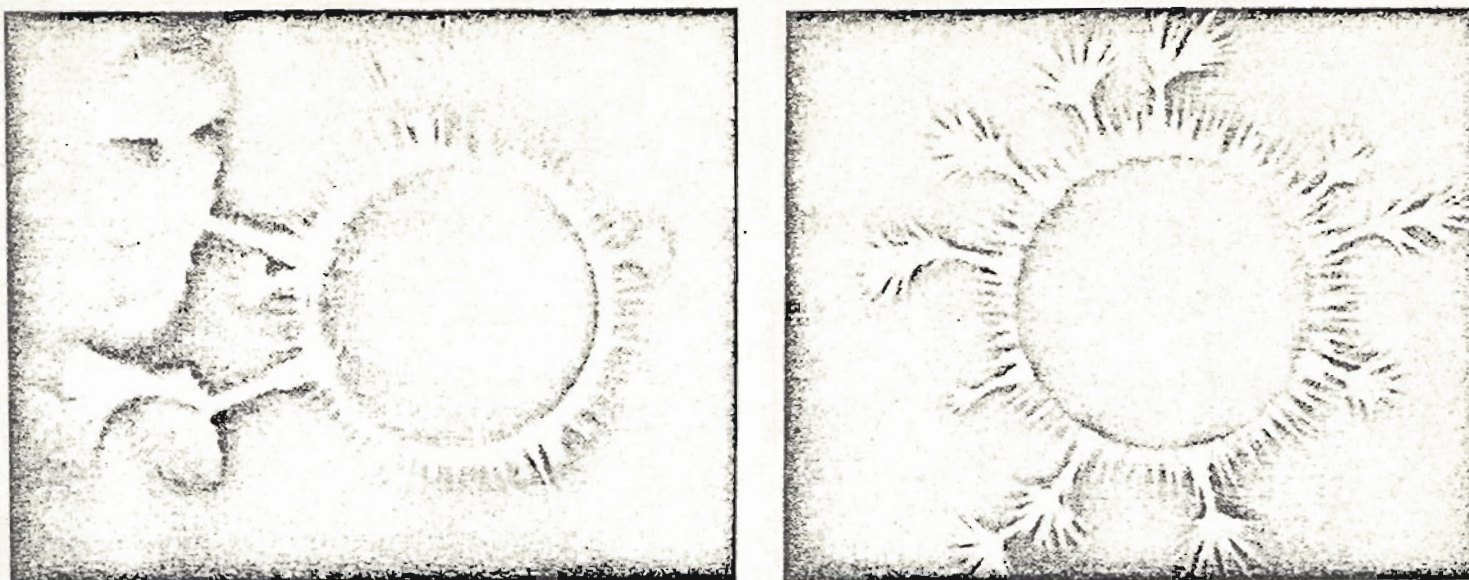


Figure 7: Electro-negative gases also effect discharge patterns. Left: N_2 plus CCl_4 . Right: Freon (CCl_2F_2)

for monitoring nonphysical energies: (a) a human being who has already developed other sensory systems makes observations with them and provides a verbal readout (a medium), (b) a living system (animal, plant, or human) plus an attached electromagnetic or mechanical device, so that the living system transduces the nonphysical energies into readout via a purely physical path (Kirlian devices); and (c) a totally inanimate device based upon a different logic system than that which we call the physical, which acts both as a transducer and a readout mechanism (no instruments in this category).

As the Kirlian device falls in the middle category, we should not be at all surprised (or dismayed) to find a perfectly reasonable physical explanation for the generation of light and for the colour observations. The important and difficult step is to prove that such observations are indeed directly correlated with energy changes in the living system, rather than just the random fluctuations associated with inadequate experimental technique. This has not yet been proved one way or the other.

In a recent Time magazine article it was pointed out that "doubt" is the most valuable weapon in the arsenal of the truth seeker. One cannot deny the general wisdom of this statement; however, the timing of the application of doubt is extremely critical, especially in psychoenergetic investigations.

If nature is constructed in the way physicist Sir James Jeans suggests—"The universe begins to look more like a great thought than a great machine"—then the state of our minds at the time of the experiment should exert an influence on the experiment. Our best procedure would then be to project a positive and supportive attitude during the running of a well-planned experiment and to reserve our critical attitudes and doubts for later when we are reflecting on the data. In this way we have a better chance of observing these psychoenergetic manifestations.

This is also the reason why most of those

studying parapsychology can be listed in the category of "believers". They would need to be in order to have a reasonable chance of manifesting positive results. Of course, they must also have a well-developed critical faculty and the personal honesty to use it at the proper time for evaluating the meaningfulness of their own data.

Mental bias part of procedure?

We should recognise that the "scientific method" does not require one to be coldly objective and critical during an experiment, but rather requires one to develop a necessary and sufficient experimental protocol for obtaining a consistency relationship via the experiment no matter who does it and where it is performed. Thus, if a positive mental or emotional bias is helpful in obtaining certain results, it may indeed be a very necessary part of the experimental protocol. But it must be specified and measured.

To move forward and reliably identify psychoenergetic effects via high-voltage photography, we must carefully monitor those physiological parameters that can directly influence the streamer process and which can be altered by mental or emotional changes in the living organism. These appear to be at least five-fold: (1) large changes in the electrostatic potential of the skin, (2) changes in skin chemistry, (3) changes in the dielectric properties of the skin, (4) changes in the secondary electron emission characteristics from the skin and (5) changes in the overall electrical impedance of the system.

To do this job properly, it will be necessary to develop high-voltage photography devices that control and vary the applied voltage, pulse duration, pulse repetition rate, radio frequency under the pulse, electrode spacing, gas chemistry, etc. In addition, one will need to independently monitor the discharge current, skin chemistry, capillary blood flow, etc. In this way, it should be possible to develop a reliable and useful life-energy monitoring device of value to both medicine and parapsychology.

The cover

Top: Kirlian photographs of a brass electrode photographed through a transparent electrode. The spacing between the electrodes was 0.2 mm (right) and 1 mm (left), and the pulse was 4 msec.

Bottom: Kirlian photograph of a finger pad in contact with colour film. The blue is due to discharge in the air gap between the finger and the film; the other colours are due to discharges forming in the air gap behind the film.