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Psychic Research

Stanford physicist
investigates that
unknown dimension
see page 3



Kirlian photograph of an electrical discharge around a leaf may provide a tool for probing interactions between physical energies and more subtle psychic energies.

Gone Skiin'

a guide to
cross-country
and downhill
resorts

see page 13



Bridging the gap...

Tomorrow's physics may include the psychic

Is there any way to bridge the gap?
—the gap between the practical day-to-day world, and those deep stirrings in all of us that seem to transcend the ordinary?

—the gap between people who circumscribe their beliefs within the structure of hard science, and those who grope beyond?

—the gap between people who comprehensively lump (and then reject) mysteries ranging from telepathy to Bigfoot, and those who uncritically accept the latest consciousness cult or best-selling miracle?

—the gap between the scientific demonstration of real but elusive phenomena, and fraud or wishful thinking?

Dr. William Tiller of Portola Valley is trying. And if successful, he may extend the physics of Einstein in the way that Einstein extended the physics of Sir Isaac Newton.

A professor of materials sciences at Stanford, Dr. Tiller is pursuing no less a goal than to help launch the physics of the next hundred years: a physics that could encompass the range of mysterious phenomena known—for lack of more precise words—as psychic or paranormal or even supernatural.

By extending the theoretical framework of contemporary physics to include higher dimensions and new kinds of non-physical energies which travel faster than light, Dr. Tiller—a distinguished physicist himself—is attempting to bring these phenomena within the scope of scientific investigation. At the same time, he is developing experimental devices and techniques to allow these subtle effects to be measured and tested.

The ultimate result could establish the cross fertilization that gives the scientific method its power—a process in which theory suggests experiments and experiments lead to the refinement and correction of theory.

"It's not like conventional science,"

Dr. Tiller explains. "Here we are trying to develop a new structure. It's like trying to paint with a new perspective—as Picasso did." He went on, "We are not going to make new progress until we have instruments to measure the new energies and a model that is big enough to encompass both conventional and unconventional phenomena."

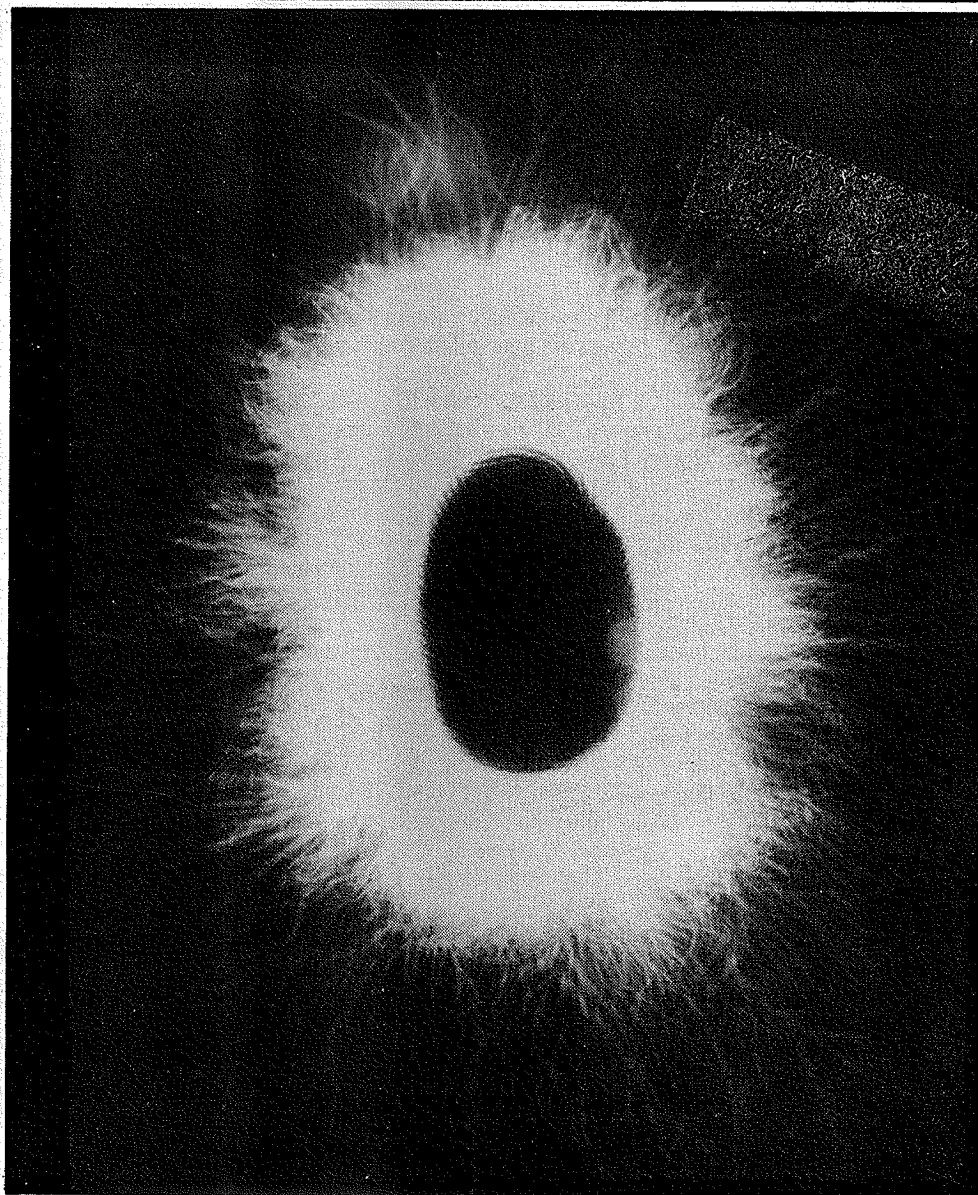
The model that Dr. Tiller is evolving may ultimately accommodate such diverse and baffling phenomena as levitation, precognition, faith healing, and metal bending. His own experiments range from observations by children who can see auras transmitted faster than the speed of light to painstaking measurements of subtle electrical effects on the body associated with psychic experiences, faith healing, and acupuncture.

Since these phenomena are so foreign to common experience, Dr. Tiller is not looking for a breakthrough, but rather for slow advances. "We're travelling in uncharted territory," he said, "We don't even have the words to describe these phenomena. We'll do it in bits and pieces, not in one burst."

Some of the bits and pieces are experiments in which Dr. Tiller himself is participating. In the case of the children observing the auras, he made a prediction based on his theory of non-physical energies travelling faster than light that was borne out by observation.

Children sit about eight feet from a Punch and Judy box containing two electrodes. As the voltage is increased, they see patterns which are not generally visible to less sensitive adults. When the children observe the patterns through a telescope, instead of seeing an image which is inverted and magnified as with conventional light, they see an image which is erect and demagnified. This image can be explained if the energy being observed is being

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This Kirlian photograph of a halo around a finger pad in a strong electric field may reveal subtle effects about the state of the finger.

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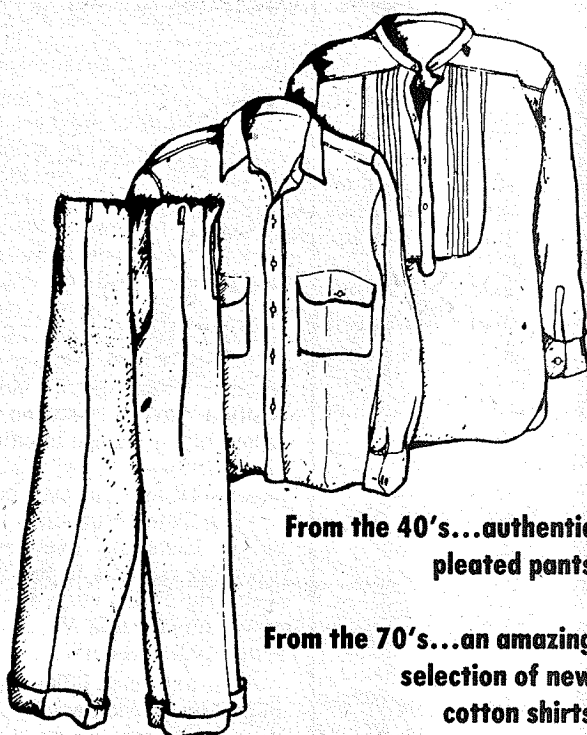
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Shopping the Peninsula

21 SHOPPING DAYS UNTIL CHRISTMAS (NOT COUNTING SUNDAYS)

Let's hear it for the "little shops" where the "May I help you" probably comes from the owner who knows the sizes, the colors, the styles in stock and knows whether or not what you want can be ordered in time for Christmas.

SHE DOESN'T ADMIT TO BEING IMPRESSED, BUT . . . The subject might be nightshirts, but the name is Dior—a cotton-poly blend, finely striped in dubonnet or green is sprinkled with tiny Dior logos (look carefully, they're there—as are the quality finishing touches—\$40 and \$45). Another Dior nightshirt, in ivory, has a look of satin but it's poly-cotton too, and the styling is distinctly "men's pajama" with fine rust piping on the collar and around the placket opening (\$55). **SARAH'S LINGERIE**, 316 State St., Los Altos (941-3061).

WEATHER-WATCHING MAN There are hydrometers, barometers, and thermometers, including one weather instrument which combines them all with one additional feature that takes out all guesswork—a tiny radio tuned to a 24-hour weather station (\$60). This gift is from **CASE 'N' POINT**, the very new resource for gifts for men ... for cutlery (Hoffritz, Case, and Puma, to name just a few) ... for luggage ... for attache cases and briefcases ... and leather accessories of all kinds. **CASE 'N' POINT** is in the mall behind Sears at El Camino and San Antonio Road. (941-4147).

HEART-SICK PRINCESS A handscreened pillow with the sage consolation, "Before you find your handsome prince, you have to kiss a lot of toads" (\$24.50)—typical of the winsome, well-designed gifts, decorations, and accessories at **VICTORIA GARDENS**, Stanford Shopping Center (321-3824).

FOR THE WHOLE FAMILY WITH YOUNG CHILDREN "The Hobbit" as recorded from last year's TV show. The set of two records, including a book, is \$8.98 (a single record with excerpts from the show is \$4.98) at **BOOKS, INC.**, Stanford Shopping Center (321-0600).

A GIFT FOR HIS SANCTUM SANCTORUM An original painting by an internationally-known artist who has exhibited in major museums across the United States. **ANNA WU WEAKLAND** works in Chinese ink, watercolor, and in acrylics and expresses, in contemporary terms, the beauty and serenity of classical Chinese art. Mrs. Weakland observes the Oriental tradition of starting the New Year with a clean palette, so to speak, therefore many of her paintings are reduced up to half price. The hours of her "open studio" are 10 to 5, Friday and Saturday, December 1 and 2, at her home and studio, 4245 Manuela Court, off Manuela Ave. at the southwest corner of Arastradero and Foothill, Palo Alto, (326-1503).

AN "OWL" PERSON These owls from Bali are carved with imagination and great talent—and they just don't sit there. They are wind knockers, giving forth a gentle "thunk." They stand about 8-9 inches high and are \$41. **ANIMAL CRACKERS**, Ladera Country Shopper, Alpine Road (854-1870).

Sunday, December 3, is the time to start the tradition long cherished in Europe—the Advent Wreath. It is decorated with ribbons, cones, berries, toy mushrooms (a favorite in German-speaking countries), and has 4 candles, the first to be lit the first Sunday of Advent; the second, the next Sunday, and so on. Old-Country tradition dictates red candles, but some churches here use 3 blue candles and 1 white. Orders are being taken by **WEGMAN'S NURSERY** for wreaths 10 to 24 inches in diameter (\$7.95 and up). Be sure to stipulate whether yours is to be hung from the ceiling or will be for the table. **WEGMAN'S NURSERY**, 492 Woodside Road, near Woodside Manor Shopping Center, Redwood City (368-5908).

IN VILLAGE CORNER ... AT THE INTERSECTION OF EL CAMINO AND SAN ANTONIO ...

If you are planning to be in Village Corner, make it around noon on Saturdays when **T. N. SPICE** is demonstrating how to use their silver-lined copper saute pans with a show-off lesson of banana and strawberry flambe and chicken filet in a parmesan-herb cream sauce. It's time to take your ease anyway with a frothy cup of cappuchino and check the full line of Arabia (Finland) stoneware which is selling at a very special 20 percent reduction—as are those show-off saute pans. **T. N. SPICE** is in the inner court of Village Corner. Just follow your nose. (941-7363).

FOLLOWS THE MARKET The home computer is a reality and can perform many more tasks than come up with the price of IBM as of this moment. It can be programmed to turn on the coffee pot and turn off the sprinkler system and the outdoor lights ... reconcile your checkbook ... and play games. It will not put out the cat. The basic Apple II system at **COMPUTERLAND OF LOS ALTOS** is \$1195, and it is hooked up to any TV and any tape recorder. Are you ready for the 21st century—today? **COMPUTERLAND OF LOS ALTOS**, off the inner court of Village Corner (941-8154).

TRAIL RIDER Whether it's a colorful "show hat" in a color like "orangeade" or a serious Stetson or Resistol in fur felt, **LOS ALTOS WESTERN** offers style and protection from sun and rain for \$30 to \$55. The shop, now open 7 days a week until Christmas, stocks everything for the rider and horse, English or Western. Village Corner facing El Camino (948-0526).

There's another Kip's Corner in this issue as well as a Piggy Bank column with gifts under \$5.

Tomorrow's physics

Continued from Page 3

transmitted faster than light in the lens material—contrary to a basic tenet of Einstein's physics, which sets the velocity of light as an absolute limit for the transmission of conventional physical energy.

In a similar experiment, children observe the spectrum from a light source on the other side of a prism located between electrodes. The children observe the familiar rainbow spectrum that any school child knows; but they also observe another spectrum with colors in reverse order at a position which can be explained by some transmission at a speed faster than light.

Children between six and 14 make the best observers in these type of experiments, Dr. Tiller noted, because they are more relaxed and do not have the hangups of many adults. Every child he and his associate, Dr. James Carlton, ever tried was successful in seeing the auras after some practice. Once tuned in to auric sight, the children could often see auras around people and animals. Some could even detect the difference between male and female flies from their auras, he commented.

In another experiment, Dr. Tiller described working with a man of unusual spiritual powers who could sensitize cameras to take "special" pictures. When the man held the camera close to his body at some highly charged event, such as a visit to a religious shrine or a spiritual rock concert, the camera would take pictures which are startlingly different from pictures taken by an ordinary camera placed beside it on the same tripod. In one picture, the unsensitized camera shows the man standing in front of a tree branch; the sensitized camera shows the man as partially transparent with the entire branch showing through his body, Dr. Tiller said. In other cases, the sensitive camera could take a picture with the lens cover on, he noted.

Because he wants to be completely sure of the scientific validity of his results, Dr. Tiller is not ready to publish his latest work. "We have something, but not enough to shout 'Eureka' and send a letter to 'Nature,' he said. ("Nature" is one of the world's most prestigious scientific magazines.) "We're not there yet. I hope and think we're close," he added. "It's important things be done right."

A warm and intuitive man, Dr. Tiller speaks with the careful precision of the scientist. He firmly believes in the existence of the phenomena he is studying. "I am not interested in proving these phenomena exist—I believe they exist—I want to leapfrog to the devices for revealing the new physics," he says. "The value is in slowly and carefully building a data base of real knowledge upon which mankind can eventually build."

Dr. Tiller explained where he split with most of his colleagues: "Most people look to extending conventional understanding to the outer limits. My intuition from the very beginning said the conventional model just won't stretch. One has to design a new model big enough to handle both conventional and unconventional phenomena."

Establishment credentials

Dr. Tiller brings solid establishment credentials to his avocation. He has a doctor's degree in physics from the University of Toronto and has published some 150 professional scientific papers in his primary fields of crystallization and surfaces. At Stanford, he teaches, does research and publishes. For several years, he was a chairman of the Materials Sciences Department, but gave up that position after a year on a Guggenheim fellowship at Oxford to gain more time for his avocation. "I got out from under the paperwork and power," he commented.

The Tillers' spacious home in Portola Valley looks out over restful views of browning foothills to the Bay beyond. Dr. and Mrs. Tiller were the fifth family to move into Portola Valley Ranch and are enthusiastic about the community.

Dr. and Mrs. Tiller trace their interest in psychic phenomena back to their college days in Toronto where they grew up near each other. When they came to California in 1964, they became associated with the Association for Research and Enlightenment and became daily meditators shortly after.

Dr. Tiller began research in the psychic field about the same time he visited the Soviet Union and observed what some of the research scientists there were doing on acupuncture and Kirlian photography.

Now his avocation takes up the third of his time not devoted to his regular job. He has already published 43 papers in this new area of research.

Electrical tracks

Much of his work is based on attempting to trace the electrical tracks that psychic experiences leave in the human body. He explained, "Suppose one watched someone having an out-of-body experience. If some aspect of being was out of the body, there should be a detectable change in the body's electrical system." Dr. Tiller compared this kind of measurement of a physical change in the body resulting from a non-physical event with the technique used by nuclear physicists to study the properties of high energy particles by studying the trail of ions they leave behind them in a cloud chamber.

There are three ways of studying these physical effects, according to Dr. Tiller:

—to talk to people who perceive or control them directly such as clairvoyants or faith healers;

—to use a living system as an intermediary: either to observe, as in the case of the children; or to be measured by physical instruments; such as electrical monitors of acupuncture points during faith healing; or

—to devise an inanimate device which responds directly to the subtle energies.

Once there are some solid experimental data, scientists can get a toe hold, Dr. Tiller hopes. "Then we can do more predicting and do more experiments and find out the strengths and weaknesses of the theory."

In his own work, Dr. Tiller concentrates on the healing aspects of these subtle energies. He is attempting to develop techniques of concentrating these energies within himself and others. For example, he works with a dowser to study the energy fields around people and objects. And he is refining experimental techniques, such as Kirlian photography and monitoring of acupuncture points, which may some day be used to pin down these elusive effects.

Kirlian photography, for example, is a complex electrical process which gives striking photographs of electrical discharges around various objects in a strong electrical field. The results are difficult to interpret, but Dr. Tiller feels that with careful controls, such experiments may tell something about the energy states of the object photographed.

Dr. Tiller concluded, "There are indeed ways one can show how altered physical states of the individual can modulate electrical discharges and induce changes in photographs, and how one can interpret the photographs to say something about the physical state of the individual." He explained, "The subtle energies found in the body will interact with the electrical system. If we can sensitively monitor the electrical network, we may be able to do experiments to reveal more subtle energies."

Similarly, research with the electrical properties associated with acupuncture points has shown striking changes associated with the state of health of various organs, according to Dr. Tiller.

If the present experiments are successful in establishing a toe-hold on this new field of physics, dizzying possibilities for applications open up. In contemplating the future of a new field of psychic engineering, it is impossible to forget that Einstein laid the groundwork for unlocking the energy of the atomic nucleus and building the atomic bomb.

"I think that these kinds of developments will have applications in new medical therapeutics, new communications systems, new energy sources, levitation technology, faster-than-light technology—that's where these things are going," Dr. Tiller said.

But there is a dark side. Dr. Tiller noted that the Russians, who were doing good work in these fields in the early seventies, are no longer allowed to communicate with their colleagues outside the Soviet Union. Noting that some of these applications might have military significance, Dr. Tiller only commented, "We can speculate on why..."

"The test of humanity is how it uses what it has wrought," Dr. Tiller continued. "It seems mankind does not grow up beyond the misuse of these things until it has the possibility of destroying on a grand scale and has to make a choice."

Dr. Tiller concluded on a positive note. "I think of man as potentially a much greater being than he presently appears; and this greatness comes from being integrated with the higher dimensions of himself. So my interest is in revealing these dimensions so that man can believe he is more than he appears to the physical eyes—and then become what he latently is."

By Marion Softky