

In 1997, I made a documentary series for Radio One of the Canadian Broadcasting Corporation. This is the third part of the 'working script' – the content I presented on radio – the basis for the television version of HAUNTED HOUSE, HAUNTED MIND.

LISTER: *Haunted House, Haunted Mind* - part three. I'm Lister Sinclair and this is IDEAS.

Believe in ghosts? Think there's an angel watching over you? Or something under the bed? You're not alone.

Science is developing new tools to chart the shadows cast by human perception. As measurements get more sophisticated, anomalies – those spooky bits of data that defy reason - are being scooped into the net of scientific enquiry.

In 1994, Don Hill and his family sold the house they'd been living in, in Canmore, Alberta, and moved out. It turned out the house was haunted. It was your standard haunted house: the mysterious noises, the chilling waves of terror, and once even your standard ghost: a luminous, transparent human-sized thing - that vanished. Frightened and intrigued, Don Hill set out to discover what it was that was haunting his house. He kept a diary, you'll hear parts of it tonight. He consulted spiritual experts. He volunteered as an experimental subject in a brain-science lab where his terrible experience in the Canmore house was reproduced. He learned about the effects of electromagnetic and geomagnetic forces on human perception.

Tonight, in the concluding programme in this series, he continues along the trail of illusion and hallucination; a trip that takes us through a landscape inhabited by ghostly sounds and enigmatic visions.

Haunted House, Haunted Mind - part three - by Don Hill

SFX: interior of passenger jet

DIARY: July 1998. I'm on a plane heading to Vancouver - correspondence with an IDEAS listener from the Lower Mainland brings me out this way again. She'd heard about my 'haunted' house in the Rockies, and she wanted to know more about Michael Persinger's research about 'those energy fields.' "I think they're in my house too," she said.

I knew - like the cops - there were certain details she could only know from actual experience. "My neighbour next door had trouble," she said. They moved out. It sounded as if the entire neighbourhood was haunted.

BETTY: Well before as I told you, I always had some fear - or I had sometimes there was a feeling of a presence or sometimes there was a

feeling that was wrong. Now, I don't feel anything. It is like I am numb. I don't have any of these feelings for the last three years. But, I still believe there's something here which is why I want to find out about it.

DH: I was curious too. A *milligauss meter*, a device that measures electromagnetic fields, was part of my traveling kit. Betty wanted me to bring it along, in the hope I could perform a high-tech exorcism - not just in her house, but next door and across the street as well.

The plane trip to Vancouver featured the in-flight movie *Lost in Space*.

Why am I still pursuing this? I thought.

Intuition answered: There's more to find out.

Coming to terms with my 'haunted' house in Canmore had led me to Michael Persinger. Dr. Persinger's neuroscience lab at Laurentian University was where I re-acquainted myself with the apparition. Sitting inside an isolation chamber, my eyes taped shut, a sequence of electromagnetic pulses were applied to my head with an experimental device nicknamed the 'octopus.' It reproduced the experience of my ghost. And I concluded that it - the 'ghost' -- was literally in my brain.

But Charles Tart, a psychologist at the University of California, wasn't convinced. He sent me an e-mail:

"I need to take some issue with your apparent conclusion that since the stimulation of your brain produced an experience similar to what happened in the house, that somehow proves that the house experience resulted from similar electromagnetic stimulation. Do you recall sitting in my office, seeing me and hearing me when you were here? Well, brain stimulation could probably create a very similar experience. Does that mean you didn't actually see and hear me when you were here? I have no doubt that Persinger's machine, with the right psychological circumstances, produced an experience similar to the one you had in your house. But the question of what caused the original experience is still open. Maybe it was an electromagnetic field at your house -- but that's something that has to be determined by actual instrumental measurement."

CHARLES TART: I have no doubt electromagnetic stimulation affected your brainwaves. But it's a big leap from that to the particulars of your experience. You went into that laboratory expecting something like that to happen. And it's very clear from all we know about psychology that a person's expectation may be more important in affecting what's going to happen than the actual experiment itself. Look at the placebo effect, which everybody has realised, you know - that's one example. You expect a drug to do something. People get better, a certain percentage of them and it's just a placebo; there's nothing active.

DH: This past summer, I met William Roll, a psychologist from West Georgia State University. Dr. Roll has investigated haunt and poltergeist phenomena for over forty years. A pleasant man. Slight. Thoughtful-looking. Wiry white hair. His glasses magnify his eyes – might have been hip-looking at one time. He's Danish. I told him about the spooky situation at my house in the Rockies and my hunch that naturally-occurring electromagnetic fields were at play. He agreed.

BILL ROLL: It's a strong haunting. And it's something to definitely take note of - especially if there are occupants in the home that include animals and includes young children. There's a good possibility the development of the brain may be interfered with in these cases. You can get inexplicable rages. Increases in temper. People get angry at each other for very little reason. There may be a depletion in energy.

DH: I felt drained living in that house. The dog barked for no reason. Our cat Celeste looked unwell. Rabbits dropped dead on the property; birds, too. One-time, a tank-full of fish inexplicably perished. It was weird. And I thought we had a poltergeist, knocking about the place.

Bill Roll thought it wasn't a poltergeist, because poltergeist's are almost always person-oriented; they only bug one person. Hauntings are place-centred. They occur in a distinct location. Any number of individuals will hear and see things if they hang around for any length of time.

SFX: dial tone - phone sequence

SCRIPT: I called the new owners of my old house - it had changed hands twice since we'd moved out in 1994 - they had to be warned.

WOMAN: Yes, hello.

DON: May I speak with (EDIT)

WOMAN: Uh-huh. Moment please...

DON: Thank you...

MAN: Jah?

DON: It's Don Hill from the Canadian Broadcasting Corporation.

MAN: Yes.

DON: ... Did you get my fax, I sent?

MAN: No...

DON: I've been trying to send you a fax...

SCRIPT (over): In all, it takes three attempts before the fax machine accepts my message. A half-hour later, I call back again.

SFX: phone tone ring

WOMAN: Hello?

DON: Yes, it's Don Hill from the CBC again.

WOMAN: Yes.

DON: Did the fax come through?

WOMAN: Yes. It's here... what is! What is this? ...

SCRIPT (over top): Language is a problem. I tell the woman that professor William Roll will call. He speaks German, I said. He'll explain the situation as we understand it.

BILL ROLL: Haunted houses tend to be in areas close to geological fault-zones. And these fault-zones produce strong magnetic fields that travel underground until they're released into the atmosphere. Some of the occurrences can be attributed to simple electrical discharges – the crackling sound, banging sounds, floating lights. Ultrasounds that animals can hear but humans can't hear. The drops in temperature is called the *Peltier Effect*. And the Peltier process is well known to science. It's a method of refrigeration really. But it can happen in nature, where a kind of natural battery you might say exists underground. And depending on the way the current flows in this battery, produce a drop in temperature above ground. Or if the current goes the other way, it produces intense heat above ground.

DH: The couple wanted to know what the hard evidence was for these electromagnetic fields. Roll explained the only way to be certain would be to measure what was going on in the house. And that would take time. "So it's only theory," the woman said. The couple wasn't about to have us in the house measuring EM fields for a week on theory alone. Too disruptive, they said. Roll is convinced there's nothing odd is in this conversation.

The woman seemed fine. Lucid. She didn't sound 'haunted.' But I wondered out loud if everything's just peachy then why are they selling the house? "They wouldn't tell me," Bill replied.

BILL ROLL: Most people who are exposed to this type of occurrence in their home, since there's no ordinary explanation for these incidents, well it must be supernatural and the likely explanation again is ghosts or demons. And you don't like to talk about that to anybody especially now if you're thinking about selling the house. Who's going to buy a haunted house? Alternatively, people just think they're going crazy.

DH: June, 1998. A British newspaper report: Low frequency sound waves - inaudible but otherwise felt by the human body - can sometimes masquerade as ghostly phenomena.

The Daily Telegraph says feelings of cold and terror are "capable of being triggered by nothing more than the wind passing over the walls." Low frequency sound can concentrate into a physical effect called a 'standing wave,' which causes things in its path to vibrate in sympathy. You'd swear it was a ghost.

The discovery was made by Vic Tandy. He chanced upon his apparition, two decades ago while working late, one night, in a medical equipment lab.

VIC TANDY: I started to feel increasingly uncomfortable. Hair standing up on the back of the neck. A feeling of being looked at. Cold. And then this grey object appeared ...maybe this is something real. Maybe it's a shadow? I had a whole list of things I was going through - maybe if I ignore it, it will go away. But it didn't. So in the end, I decided to turn around and look at it. And as I did that it disappeared! I started putting it down to strong coffee. So I packed up, went home. And the following day, I was going to a fencing competition - sword fighting. The type of handle that I like to use on my foil - on the sword - I needed to cut a threat on the end. I had all the gear to do it. But it was easier to hold it in the vice on the engineers bench in the lab. So, I went in early. Put the foil blade into the vice. And the thing started to move! I could just see a slight movement at the end of the foil. I suppose it didn't take me too long to figure out it was getting some energy from somewhere - wasn't something spooky happening.

DH: It was a 'standing wave,' and it was trapped in the lab. Vic Tandy soon located the source of his 'ghost.' It was a large machine - an extractor fan - that had recently been installed at the factory.

VIC TANDY: That was clearly the source. When we turned that off the effect went away. It was if we thrown open the windows in the room. While it was on all the time, we just sort of adapted to it. But as soon as it was turned off, well, 'thank goodness for that you know.' It was a very noticeable affect. But you didn't notice it if you were in it for a long time.

DH: Scientists at NASA, the American space programme, determined the resonant frequency of the human eyeball is at 18 hertz - that's 18 cycles per second. Vision smudges at that frequency, outlines of apparitions sometimes appear. Vic Tandy roughly calculated the 'standing wave' in his lab at around 18 hertz - the same measurement as NASA's - the tell-tale footprint of his ghost.

SFX: Tibetan overtone chant

DH: There's a special relationship between sound and the way things look.

Buddhism teaches that everything one perceives is illusory. One lama taught me a lesson I'll never forget. I asked Zasep Tulku Rinpoche for a demonstration of Tibetan overtone chanting (for *Chants Encounter*, a television programme I made a couple years back). He complied with the request, filling the room with an eerie, hoarse style of throat-singing. I was familiar with low-pitched overtones, and by this time had learned to produce a reasonable facsimile of the sound myself. Here's what I did (demonstrate). Well, you get the picture. What I wasn't prepared for was the accompanying visual effects. As Zasep intoned, I watched his face distort then transform - eyes bugging out - into what appeared to be one of the wrathful deities depicted in traditional Tibetan *thangka* paintings.

For a moment, Zasep had become a wrathful dragon-like deity - that's how I perceived him. "Do you require any more?" he asked. "Uh, thanks...no," I said, a bit stunned by the experience.

LISTER: *Haunted House, Haunted Mind*. An investigation along the trail of hallucination. You're listening to IDEAS on CBC Radio One.

SFX: water lapping on shore

DH: Imagine Selwyn Dewdney's surprise in the fall of 1958, when he came upon a wall of dramatic centuries-old rock paintings on a cliff, jutting out over a lonely northern shore along Lake Superior. The dramatic 'vision quest' site at Agawa Bay, just south and west of Wawa, Ontario, had finally revealed itself after fourteen months of intensive searching.

In the early '80s, I, myself, experienced the wonder of the rock paintings at Agawa Bay. Fog had blown in off the water, enough to discourage tourists from straying off the Trans-Canada Highway and down a winding dirt road that led to the site. Years before, I had come to the sacred cliffs along the lake, when my wife Anne and I were collecting oral history throughout northern Ontario. There were no markers guiding our way then. The location was a local curiosity and hardly ever broadcast to outsiders. I felt compelled to visit again - this time alone.

The gloomy weather ensured my solitude at the site. The wind picked up as I trekked down to the water; a curious whistling sound echoed through a canyon-like gap that veered off to the right of the main trail. A huge solitary boulder wedged at the top of the gap looked as if it was working to split the landscape in two. Perhaps it was responsible for the sound, I thought. I stopped to listen.

Creeping along the cliff, camera in hand, I snapped the first in a series of photographs of the rock images. The forest animals and battle pictorials were clear enough, their meaning self-evident. But what were these odd 'thingees'? My eye was attracted to the swirls and abstract forms that graced other sections of the wall. Funny, I thought. These squiggly lines looked strangely familiar. Had I seen them before?

MUSIC: Saskatchewan Cree drummers

DH: Prolonged rounds of drumming and chanting are said to induce trance hallucinations. The drone of the *didgeridoo*, a wind instrument sacred to the Australian Aborigine people, can create a sonic substrate for visions.

The art of the Aborigines, many African cultures, and native North Americans is filled with visionary images - entoptic images - which means 'within vision' - geometric patterns that turn up consistently in rock and cave paintings, petroglyph and 'vision quest' sites. The astonishing thing about entoptic imagery is it appears to jump between cultures, even when distance and chronology make it impossible for civilizations to have had any contact with one another. The images appear to be produced by the brain.

DAVID LEWIS-WILLIAMS: We have direct evidence of it from the Amazon Basin where people do indeed make imagery and explain to their enquirers that this is the imagery they see in trance states. And neuropsychological studies conducted far away from the Amazon Basin produce just the same sort of geometric imagery...

DH: This is David Lewis-Williams, an archaeologist at the University of Witwatersrand in South Africa. Professor Lewis-Williams has studied the entoptic imagery of rock and cave art created by diverse cultures, from Paleolithic times to the present. The peoples who have 'written their dreams upon the rock' might have done so during an altered state of consciousness - North American Indians call it a 'spirit or vision quest' - induced by various forms of deprivation, 'auditory driving' with drums and rattles, flickering lights, hyperventilation or hallucinogens.

DAVID LEWIS-WILLIAMS: So there's no doubt shamans make this sort of imagery. And I think that there are some kinds of trance experience where the imagery is projected rather like a slide, or film-show before one's eyes.

DH: People try to make sense out of what they see - geometric forms such as grids, spirals, zigzags, dots and curves. But the sense they make is dependent upon cultural sensibilities.

RON SIEGEL: Well, we all seemed to be wired pretty much the same. And it doesn't matter if we're having dreams, fantasies, thoughts or hallucinations. The brain is the same for all of us. It seems to receive and process and store and retrieve information in the same way.

DH: Ronald K. Siegel is a professor of psychopharmacology at UCLA's school of medicine. He's also the author of *Fire in the Brain*.

RON SIEGEL: Some of the geometry has to do with how the visual system for our species is arranged. For example, very often we'll see horizontal lines going across the visual field and these come from folds in the tissue around the eye. You'll very often see lights or colours pulsating. And this is because of the pulsation in the blood vessels in the retina behind the rods and the cones.

You may see the face of a loved one and it may be a very different one that I see. But my argument is that we'll see it on the same screen. We'll see it in the same geometric arrangement. We'll see it with the same colours, the same movement patterns. Those things are fixed by the projector that we all inhabit - that is our brain and our visual system.

DH: Entoptic images at rock art sites are usually accompanied by depictions of mythological creatures - half human, half beast - an animistic netherworld familiar to Swiss psychologist Carl Jung, as the icons of the unconscious. This is the beginning of stage three of trance-induced hallucinations, a sometimes terrifying blend of iconic images with the sensation of being inside a rotating tunnel - immersed in the vortex.

Ron Siegel.

RON SIEGEL: We worked with a group of Indians in the High Sierra range in central Mexico that had been isolated since the time of Cortez. They still spoke *Hahuatl* which is the Aztec language. And when they started having recognizable hallucinations of people and places, what did they see? They saw deer. They saw corn. Other Indians. My subjects here in North America, when given the exact same drug - which was peyote - the exact same dosage. They also saw recognizable landscapes and images. But what did they see? They saw freeways. And the saw automobiles. Houses. They did not see deer. The kind of flora and fauna that is common to the Sierra Madre because they're not around it. But they saw it in the same vivid, super-saturated, slide-show type of presentation that reminded them of Mickey Mouse type of animation (with animated movies you get very super-saturated images). That seems to reflect something about the way in which the brain stores images and retrieves them because when the Indians drew out the pictures for us, they were drawing cartoons.

LINDA JAINE: One of the oldest forms of energy for aboriginal people are rocks. And we utilize that energy in a lot of our ceremonies. And we honour that kind of energy...

DH: This is Linda Jaine, a lawyer and First Nations' Cree.

LINDA JAINE: When we see a spirit, often times in our lodges, they're little round balls and they're a colour. So that they can manifest themselves - being visible to the eye, but they don't have to manifest themselves that way. And when we call back the spirits from the other world, we're also utilizing the energy from the rocks. The old energy, the wise energy. The wisdom that is gathered in these rocks over the ages.

DON: Are you saying the rock itself generates energy?

LINDA: Our belief system is that rocks have energy. And they have one of the oldest and most potent forms of energy.

DON: Could the rock be like a device to communicate with?

LINDA: I don't know.

SFX: four-wheel drive interior

DH: I'm traveling across the Mojave Desert in southern California. My guide is Dr. David Whitley, a former professor of archaeology at UCLA. His four-wheel drive is maneuvering toward Surprise Tank, a rock-art site filled with petroglyphs - ancient images carved in stone - some as much as 12,000 years old.

Dr. Whitley has been investigating the archaeology of the 'vision quest.' Recently, he made an exciting discovery.

DAVE WHITELY: You look at shamans all over the world. Quartz happens to be an important component of their ritual kits, their ritual paraphernalia. But the question that comes is 'why, if quartz is the most common mineral on earth, are shamans everywhere including it in their toolkits?' And what we've discovered is quartz was being selected because of its *triboluminescent* qualities. This is a characteristic of the rock: you take two quartz stones into a dark room and you rub or strike them together, a photon flash will be created.

On *vision quests*, shamans would take white quartz rocks. They would strike them together as our Native American informants have told us, so that the power that was in the rocks would go out of the rocks and enter the shamans body and enhance his own potency.

MICHAEL PERSINGER: We know that strain within the earth's crust - doesn't have to be very deep - can produce the kind of pushing affect on certain crystals...

DH: Dr. Michael Persinger is the director of the Neuroscience Laboratory at Laurentian University in Sudbury, Ontario.

MICHAEL PERSINGER: If you pressure crystals you can create electromagnetic fields, and probably other fields in combinations about which we know little at this point. As you know when you put pressure on quartz - the piezoelectric effect which will generate radio frequencies, for example, and even some types of heat and sound can be produced. So: If individuals were in this area and were exposed to the magnetic, electric and perhaps physically-sounding fields that would be generated by small, transients pressures generated from this rock you'd expect to have significant attribution to these areas; they'd be holy sites or special sites. Positive sites, particularly if the experiences were good and pleasant.

The individuals would also have their temporal lobes and their areas stimulated, so that you'd expect that primary perceptual forms would emerge such as the spirals, the lattice formations, and certain primary features that are generated when you stimulate the temporal lobes of the brain such as the outline of a face or the outlines of a hand. These experiences would be common, you would find them all over the world in all cultures because the human brain is remarkably similar across cultures and across all time.

DIARY: July 1998. 'Betty's' house near Vancouver. A standard slice of suburbia on the side of a big hill. Nothing to distinguish this place as unusual - needs a coat of paint maybe. But is it 'haunted'? All I have is 'Betty's' report.

BETTY: When I first came here, the minute I stepped in the house, there's something about it I didn't like. Some bad feeling. And I don't know if I ever felt that before. My parents were thinking of buying it. And I told them 'don't buy that house, there's something wrong with that house.' I don't know how to explain it.

CHRISTINE: My family has moved from California in 1969. As far back as I can remember there has been incidences that have happened specifically in the home to myself and my father....

DH: This is Christine. As a youngster, she lived in the house next door to Betty's. She thinks her old house is also home to a 'presence.'

CHRISTINE: Hearing footsteps, and believing that somebody was coming towards me and yet nobody else heard them. And I would still hear them. And I'd scream and this would go on. I think my parents thought as a kid I was having nightmares. But that went on for a long period of time. As I got older, more into my teens - to me as my memory serves me - I was alone in the home. But again, I felt a presence. And then things would start to happen. Lights would go on and off. The stereo would turn on. And I'd see it in front of me going back and forth. And then it escalated to literally feeling somebody touching me and moving my body.

DIARY: I got Betty, Christine and another neighbour, who joined our afternoon soirée, to fill out a *Roberts Inventory of Common Experiences*, a psychological questionnaire. Embedded within the quiz are questions which draw out whether someone is predisposed to *temporal lobe lability* - the kind of person who might be influenced by the weak, natural electromagnetic fields sometimes associated with special places.

CHRISTINE: One of the things I forgot about was the dog would often go nuts for nothing in the hallway. And that happened many times. I'm not talking a door-knock. I believe he must have seen or sensed something. And it always seemed to be in the same spot where this would occur.

BETTY: Even sitting in this room, I would sometimes think there was a presence in this room.

DH: Where?

BETTY: In this room, there's something or somebody watching me.

CHRISTINE: There were lights. It was a chandelier in the dining room. And it would either go on or off. And one particular time, it just flickered a bit - that could have been something electrical. I don't know.

BETTY: There was something curious happening, before you moved, I was talking to your father about it. Sometimes in this neighbourhood there was a very strange smell - I've never smelled it before - it happens even now sometimes. But this was different. And I remember just before your parents moved, your father came to me and said there was some strange smell happening here some nights.

DH: I called up Christine's dad, a chirpy kind of guy. He's living up along British Columbia's Sunshine Coast. Very happy to be out of his old place. He claimed - as a matter of fact - his former home was situated in one of the world's most active areas for UFO flaps. Great, I thought. Another flake-ball. However, he also cited the big hydro transmission towers which cut through the heart of the community. His concern seemed authentic, so I paid attention.

BOB: We always felt - I hate to say this - a 'presence.' Ah... Especially downstairs in the bathroom area. Often there were a lot of times where doors slammed. There was no wind. We couldn't figure out what was slamming the doors. There was no - no knocking. But, definitely - we used to call it

the 'Indian' because that's an old Indian graveyard there - going back hundreds of years.

DON: How do you know that?

BOB: Just from local - what people are telling me - this is, you see - down at the foot of what they call Cottonwood Drift or cottonwood down on the Fraser, this is where - in fact down at St. Mongo - where the Indians used to gather for thousands of years to catch salmon. I had been told by several people, the whole area where we lived up there was nothing but an old, ancient burial ground.

DIARY: I brought the *gauss meter* to Vancouver with instructions from Michael Persinger on how to operate the monitoring device. The airport security guys were kind of suspicious. I told them straight up that it measures anomalous electromagnetic fields. Geologists use these meters in their search for precious metals. "Okay," the commissioner nodded.

DH: As I plugged in the gear at 'Betty's' house, a hush fell over the women. I felt their expectancy. It was like I was some kind of 'ghost-buster.'

BEGIN ACTUALITY

DON: Take me to the spots where you think there might be something going on.

BETTY: It was out here. My friend got stomach pains after he left here. He wouldn't stay here.

DON: It's in here...

BETTY: ... a little bit here.

DON: Oh! How are you feeling?

CHRISTINE: My heart's racing for some reason...

DON: You used to play in this room? Show me where...

CHRISTINER: Here. I was drawn to immediately...

DON: Right about here, eh?

CHRISTINE: Yes.

DON: I'm personally feeling a tingling as well. Do you smell anything?

CHRISTINE: Except for my own deodorant, no! (laughs)

DON: Did somebody break wind? (big laughs)...

MICHAEL PERSINGER (over laughter): Our measurements in actual houses and places like that indicated the pulse-like forms that are generated naturally in these settings can produce opiate-like effects that can produce giddiness. That's the positive side. But we also know that there

are patterns generated that can produce disruption and oppression in the chest that can lead to feelings of choking, and sometimes intense fear. So, depending upon the pattern you can get really different experiences. And the reason is the physical stimuli directly affect the brain. If you affect the brain, you affect all of perception.

RESUME ACTUALITY

DON: Excuse me, Christine.

CHRISTINER: Sure.

DON: I'm hearing a bit of buzzing in my ears...

CHRISTINE: I'm definitely picking up something there! Or it could be... hmmph.

DON: What are you hearing?

CHRISTINE: I'm not hearing it, but I'm being drawn... it's like right... it's not here... it almost seems to move a bit...

DON: Yeah. It would be transient...

CHRISTINE: ...and I feel it! Well it's tingly right now. It's an odd feeling....

DON: It's a tingling... I feel as well a tingling sensation, but I'm not able to get... there's a little bit of a 'spike' there. I can't be certain about this...

DH (over actuality): And then we went below. A kind of carport under the bedroom. But the meter didn't register the tell-tale bounce. And I went over the space again and again. Nothing.

We did get a big reading on the bathroom, but it turned out to be the stove on the opposite side of the wall.

MICHAEL PERSINGER: The other important feature of energies that are produced in 'special places' - be they 'haunt' or other types - is that the energies that are generated are transient. They only occur for a brief amounts of time - usually about ten second to a hundred second period - and they occur in bursts. They can occur many times, but only briefly at any given time. That suggests that whatever is producing these phenomena are transient in nature - the physical forces are transient in nature and can be repeated. It also indicates if you're going to measure them you just can't go in with a meter and walk away. You have to leave a continuous recording device for several days or weeks.

DH: The readings from the gauss meter are inconclusive.

BETTY: (sigh) I don't believe it's in my head. No, I don't believe it's in my head. But, I guess it's sort of a denial that there's something different here because I can't prove it. I can look out and here's a normal neighbourhood with pretty trees and flowers. Or it's not going to affect me. It's not so bad. Somewhere in the back of my mind there's a fear that it is that bad. That I should be getting out. That I shouldn't have stayed

here.

CHRISTINE: I really have to echo the same sense. I don't know what it is. But there's something here. There's 'something' here.

DIARY: Winging my way back to Ontario - on the 'red eye' from Vancouver. I met a Buddhist nun. Small conversation in the airport lounge.

During the trip, somewhere over the prairie, I saw what looked like a lightning storm. Flashes of distant thunder. I recall looking out over the wing before sunrise. A very odd ball of light - a deep golden, orange ball of light - in the distance arched down sharply from on high, made an f-like curve, diving steeply below the wing then shooting off into oblivion. Perhaps ball lightning?

After the plane landed, I caught up with the Buddhist nun again. She was off to Hamilton. We shook hands before parting. And she left me with a tingling sensation, the same kind of feeling left when I exchanged a handshake with Lama Kaldan, a year ago.

DH: In a laboratory in Topeka, Kansas, an experienced meditator sits in front of a wall of polished copper plate. The whole of his body is carefully insulated from the ground. Sensitive equipment monitors his progress as he begins to contemplate his own image reflected in the copper wall. Five and ten minutes pass. Then twenty. And then anomalous events of an electric nature begin to occur.

DEAN RADIN: Highly reflective surfaces can be traced back for millennia as a meditative and contemplative tool... .

DH: This is Dean Radin. He's the author of *The Conscious Universe: The Scientific Truth of Psychic Phenomena*. He's also a visiting scientist at Interval Research Corporation in Palo Alto, California. It's a start-up company owned by Paul Allen the co-founder of Microsoft.

DEAN RADIN: In the Tibetan tradition, the training a student how to meditate properly was to sit him on an insulated chair, insulated from ground, in front of a highly-polished copper surface. There's something about this system that would enhance the meditative experience. So that the Copper Wall study was looking at to see if it really does enhance the experience - whether it makes a difference - and whether there are any electrical effects that are picked up. And the answer is yes to all of that.

ELMER GREEN: The idea I had in mind was if we find any electrical effects, and this is straight-forward electricity - nothing mystical about it - just absolute straight-forward electricity. If we find electrical effects, then we can assume that probably something generated it. In the same way that lightning generates thunder. And that might be at some future date be investigated as what in India was called *etheric energy*.

DH: That's Elmer Green on the line. He's the father of 'biofeedback,' a technique for monitoring brainwaves, which helps people manage their emotional states. It was developed at the Menninger Clinic decades ago. He was the lead scientist at the Copper Wall experiment at its inception in 1983.

The most dramatic results at the Menninger Clinic have been recorded with practitioners of Therapeutic Touch (a kind of 'laying-on' of hands employed by clerics and other spiritually-based healers). Sudden bursts of high-voltage electrical energy have inexplicably radiated from these people.

ELMER GREEN: That is something the Tibetans talk about, the Hindus take about, and the 'healers' talk about it. In other words, they say, 'if you give me the name of the person you want me to focus attention on' - makes no difference how far away they are - if I meditate and send energy, the healing affects will be the same if they're next door or in the next county.

DEAN RADIN: That is a possibility. That there is some way of - maybe some individuals are electromagnetically different. Or they develop into that and they can influence other folks. You can imagine, for example, if you were carrying a device that was broadcasting at similar electromagnetic band that just so happen to interfere with some of the neurological processes in a person. And that person walking around would be perceived by others as very strange. They may not a link that this is the person, but when-ever that person is around weird stuff happens. Well, that's technologically probably even feasible. I mean microwave generators and all kinds of strange things can be used to introduce odd perceptions. And possibly even knock somebody out.

DH: Tibetan *rinpoches*, literally translated 'most precious' lamas, instruct students of Buddhism on a number of levels. There are 'oral transmissions,' which accompany various ritual initiations, usually of an elaborate nature. And there are teachings that are simply felt and taken in. "The lama generates positive feeling," says Zasep Tulku Rinpoche, "to create a sense of well-being." When a high-lama enters a space, it becomes charged with his energy. So much so, that some people can't handle it. I've witnessed students blanking out during a teacher's commentary. Others become susceptible to nervous ticks, and bewildering compulsions. And its common to hear and see things, seemingly directed by the Rinpoche to one's personal attention, that are nonetheless unheard and unseen by others sharing the room.

Paul Devereux.

PAUL DEVEREUX: Yes, I have. The classic case of a powerful affect on other people by a spiritual master is the famous practice of *dar chen*, of passing on an altered state - a state of enlightenment - by the master touching the disciple or blowing on their forehead or doing some little physical gesture usually involving a physical contact. That for a short brief period will give the disciple the actual inside knowledge of a state of enlightenment, at least a heightened state of consciousness.

It's possible the mental rhythms, the brain rhythms of these highly-charged people can actually have an effect on the electromagnetic environment around them. We all produce magnetic fields out of our brains, they can be measured around our skulls. It's possible I guess, a master and adept have stronger fields that extend farther that can perhaps trigger reciprocal states, a physical alteration in the brain rhythms of people near them. So I think there may well be an actual measurable material mechanism

surrounding these type of people.

DH: Dr. William Roll

BILL ROLL: Well, there is some evidence that certain individuals can produce electromagnetic fields. Certain individuals seem to have that capacity. In other cases, another possibility is that individuals modulate ambient electromagnetic energy and focus it in some directions that can cause optic movements or perhaps apparition-type experiences.

DIARY: Vancouver. A visit with Arthur Erickson, the architect. He talked about his mentor the painter Lawren Harris. Our conversation centred around Madame Blavatsky and her '*theosophy*,' a central force in Harris's life and work as an artist.

"He painted what he saw," Erickson said. Even the abstract stuff? "Oh, yes. Carr too." I envisioned Emily Carr's swirls of radiant light, a trademark of her west-coast landscapes. "The landscape spoke to them." Erickson said it was the 'energy' of the earth.

And then - out of the blue - Erickson told me about a Brazilian he met who emitted lightning. Oh, yeah, I thought. Sensing my incredulity, Erickson said the fellow had been struck by lightning, and was somehow able to emulate it. "He did it to me," he said.

ARTHUR ERICKSON: And what he had you do as part of his healing treatment was to lie down. He would sit at the foot of the bed on the floor. Begin to breath and build up his energy and suddenly the whole room - lightning was flashing all over the place and running through your body - oh yeah. And I was watching when it was happening to him. And I could see it just streaming through. It was quite amazing.

MICHAEL PERSINGER: Now this is not an unusual observation...

DH: Dr. Michael Persinger.

MICHAEL PERSINER: The idea of having coronal discharges and other types of discharges have been reported. It's more likely to occur in under-developed countries where you have more risk of unusual development and congenital anomalies taking place. Correlates to that have included at least three cases of individuals who have had great electrical potential stored in their bodies that when they touched individuals they were shocked. And obviously these individuals had very few close friends. And current induction was significant to knock a grown man off his feet.

The other important feature to realise is the human being has billions of synapses. They are usually oriented in quasi-random ways throughout the brain, spinal cord and peripheral nervous system. If many of these synapses were ephaptic - that is they were electrical connections rather than by chemical connections - and one would not need very many of these - you would have the capacity to be like an electric eel. The electric eel is a very small animal - can generate a fatal shock because of the alignment of the nerves and the potentiation of the actual potential and nature of the gap junctions. If even a small component was duplicated in a human being, you'd have the potential to generate a tremendous current that to the grounded person could be potentially lethal.

DAVE WHITLEY: Okay. Lights in the sky...

DH: Dave Whitley.

DAVE WHITLEY: One of the southern California Native American groups - the *Cahuilla* - who lived in the Palm Springs area. They had a very significant spirit associated with shamans who was known as *Tahquitz*. Tahquitz was essentially the primary spirit helper from which shamans obtained their supernatural power. One result of that is that rock-art sites were known as *Tahquitz-puki*, which means Tahquitz's house. Now it turns out 'tahquitz' means ball lightning. And so that particular phenomena, which frankly is quite rare. I mean lightning in California alone is fairly rare. But they were keying on what in fact was a real, natural phenomena.

DH: Paul Devereux heads The Dragon Project Trust, a team of scientists studying claims of unusual energies at prehistoric sites world-wide.

PAUL DEVEREUX: We certainly have found magnetic rocks and have found areas of high natural radiation in and around, or adjacent to places that have long ago developed as monuments of religious significance.

DH: Michael Persinger

MICHAEL PERSINGER: There'll be some areas more prone than others. Because we know just like some areas are very refreshing - near waterfalls, certain highly-green areas where there's lots of oxygen, health spas and so forth - there are also areas that recurrently are associated with special kinds of experiences that have cosmic significance. And incidentally the cosmic significance is due in large part to the fact that the same stimulation that produces the perceptual phenomena also stimulates the part of the brain that gives it tremendous cosmic and divine meaning.

DH: Dr. William Roll

BILL ROLL: Well, it's a very interesting question. There are areas that supposedly have healing powers. And it stands to reason that there may be areas that have power to harm. And certainly the home that you occupied, if stayed in for any length of time, certainly had that possibility and probably that actuality it is a dangerous place. Measures need to be taken to deal with that danger.

MICHAEL PERSINGER: What we have found experimentally is that certain kinds of pulses generate the opiate release which occur naturally which we can duplicate experimentally produce very pleasant feelings, people want to come back. But we also have pulses which also occur in nature; they're frequency modulated in large part that produce terror; they also produce aggression, irritability and unpleasantness. And if you happen to be in this area or live in it you'll be inundated with these experiences to the point - potentially - of adversely affecting your health.

DH: October 1998. I'm in Canmore again making a television programme about my 'haunted house' experience in the Rockies.

DIARY: I thought I'd give it one more go. From the vacation trailer park - a temporary home for the television crew - I was mere minutes away from my

old house in Canmore. But it may as well have been a zillion kilometers. I called from a phone booth. A man answered with an accent. The phone-line crackled. I quickly identified myself. He didn't say anything - handed the phone off to a woman. "Yes," she replied. I explained what I was doing. Told her about possible machine & computer anomalies - not just the spooky stuff - because of the naturally-occurring fields. "Science is interested," I said. And I told her I'd like to speak to the couple about their house, in person. "October is not good," she said. And then I told her I was already in town. Just around a few corners, in fact. "My husband does *not* want you to come in here," she said tersely. I offered that "I might be able to answer some questions. Why your phone, for instance, is ...er, might be distorted..." She didn't bite. "We are having renovations," she said. Silence. There was nothing left to say but good-bye.

SFX: phone hangs - dial tone

DH: An IDEAS listener from Saskatchewan writes: "Has anyone considered the possibility that electromagnetic radiation does not induce hallucinations, but rather helps us to see what is already there?"

"Perhaps a spirit world does exist alongside us all the time," the listener speculates, "in a kind of *anti*-universe."

"By stimulating certain parts of the brain, perhaps we are able to see more." And if that's possible, the listener suggests "It may be that these 'hot spots' on earth are just places that have enough electromagnetic radiation to allow us to see what exists everywhere."

Dr. Ronald Siegel

RON SIEGEL : Depending on the circumstances of where you are, will depend on how you interpret these particular phenomena. In our laboratory, people expect to see these things and none of them freak out. None of them start talking about UFOS, near-death-experiences or 'visits to the other side' or all kinds of cosmic, spiritual journeys. They expect to see certain phenomena and they report it with a certain detached medical perspective. But in the real world, people will be influenced by the set and setting; by their expectation and attitudes about where they are.

The good news also is this shows no matter how different we look on the outside to each other, there's a harmony of this interior landscape that we all share. And that should bring us all a little bit closer together.

LISTER: *Haunted House, Haunted Mind* by Don Hill. Three programmes from IDEAS produced by Max Allen with Dave Field.

END OF THIRD HOUR

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