From Raymond_Shaw@mindlink.bc.ca (Raymond Shaw) Sat Aug 15 05:15:37 1992
Path: igor.rutgers.edu!rutgers!ub!zaphod.mps.ohio-state.edu!magnus.acs.ohio-state.edu!usenet.ins.cwru.edu!agate!rsoft!mindlink!a1593
From: Raymond_Shaw@mindlink.bc.ca (Raymond Shaw)
Newsgroups: alt.alien.visitors
Subject: Crop Circles
Message-ID: <14320@mindlink.bc.ca>
Date: 15 Aug 92 09:15:37 GMT
Organization: MIND LINK! - British Columbia, Canada
Lines: 317

I have been following the various postings on Crop Circles and thought people in this group might find an interview with Colin Andrews (founder of Circles Phenomenon Research, an internatiional organization dedicated to the investigation of the crop formations) by Monte Leach, USA editor for Share International magazine, of interest. This interview is excerpted from the July/August 1992 issue of Share International.

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THE SIGNS HAVE ARRIVED

Interview with Colin Andrews
by Monte Leach

Colin Andrews is an electrical engineer and former senior officer with local government in West Hampshire, England. He is founder of Circles Phenomenon Research, an international organization dedicated to the investigation of the crop formations. His 1989 international best-selling book Circular Evidence, co-authored with Pat Delgado, brought widespread attention to the phenomenon, and has been translated into Japanese, German, Spanish, and Italian. A more recent book, The Latest Evidence, was published in 1990 (see Share International July/August 1991). Monte Leach interviewed him.

SI: What is the latest update on the crop circle phenomenon?

CA: We have been showing evidence, arrived at by a German distillation process at HSC laboratory, at Stroud in Gloucestershire, that there had been a change in the crystalline structure of the [crop circle] plants. This is an unconventional process that's worried a lot of scientists, who were concerned that we were travelling up the wrong road in our research.

I disagreed, and continue to disagree. But because it was an unconventional approach, we had to find a laboratory prepared and equipped to undertake more conventional analytical processes. Dr W.C. Levengood, a biophysicist and plant expert in Michigan, took up the challenge. He already has secured two major discoveries. One is that the cells at the nodal point, the point at which the plants bend, about a half to one inch above ground level, have fractured and scarred. That cannot occur by the trampling of feet, or whirlwinds, or the other processes that we hear about. Dr Levengood is not able to state precisely what causes that to happen, but is suggesting that it is due to a rapid increase in temperature within the plant. This fracturing and scarring of the cell structure supports the HSC Laboratory results.

SI: What was the other important finding?

CA: Dr Levengood planted the seeds from the cereal crops involved in this phenomenon (those that were involved last year) and germinated them in environmentally-sound conditions. He found that the date at which the plants germinated was consistent with the controls, the plants outside of the crop circle area. What he then found, and this is consistent with what we have been looking at over the years, is that the plant growth is positive. That is to say, the plants, once they've germinated, grew at a very much more accelerated rate above ground level [than the control samples]. The root structure was also much more extensive and healthy below ground level, as compared with the control samples -- indeed many-fold healthier and more productive. That, too,

is a very important discovery. The plants were taken from three sites in the world -- Australia, America, and Great Britain. We're looking at a consistency here. Again, comparing that with wind damage, hoaxing, and trampling by human feet, it isn't an effect than can be replicated.

SI: Will these results be published in any way?

CA: Yes, they will be. In fact, in a limited way, they have already been published recently.*

SI: Are there any other developments with the scientific research?

CA: Yes, the work of Gerald Hawkins, the respected scientist in Washington, DC, who has written books on the geometry of Stonehenge.

SI: What has he found with the crop circles?

CA: It's looking very exciting indeed. Prior to the launch of Circular Evidence, we had an 'uncontaminated' period, a period during which -- I would pretty well put my life on it -- we were not receiving any hoaxes at all. Since the book was launched, the public became aware that something unusual was going on, and of course now we have a high number of claims of hoaxes and indeed physical hoaxes as well.

But in the crop formations of that pre-contaminated period prior to 1989, what Gerald Hawkins has proven is that, well beyond a chance of over 90 per cent, we are looking at diatonic ratios within the crop circles. And perhaps we're looking at ancient geometry which could relate to sound itself, because these are the same ratios which underlie the diatonic scale in music. It's an extremely significant development. What's for sure is that I doubt if there is any hoaxer in the world who would begin to even know what it is we're

talking about, let alone calculate his handiwork to compare ancient diatonic
ratios of that kind.

The Gulf Breeze incident

SI: Anything that we can look forward to in the coming months?

CA: Early this summer, there's going to be a surveillance operation. It will
be similar to what happened when I planned Operation Blackbird with the British
Army, but it will involve no media whatsoever. It will be confidential. A
site has been chosen. It's in central-southern England, and it will be at a
site where the ground markings have appeared regularly, and also where aerial
phenomena are occurring regularly.

We're interested in those two particular elements because of a major
development which took place in Gulf Breeze, Florida, on 13 March this year.

SI: This is your work with Steven Greer?

CA: We've been working with Dr Steven Greer, a physician here in the US. He's
now heading his own SETI project [Search for Extraterrestrial Intelligence],
and has worked out over a period of 18 months a protocol for interaction with
an airborne object. He took his team of 33 observers to Gulf Breeze, opposite
the Pensacola military establishment there.

On 13 March, his team of 33 observers established their position. Using
powerful one million candle-watt search beams they formed a triangle of light
in the sky. Within seconds five white lights with orange balls on the under
side appeared, moved across the sky and took up position at the triangle's
apex. They maintained this position.

In the next stage Steven flashed the search beam at a pre-determined
rate onto one of the objects. Meanwhile, everything was being filmed on video
camaras. There were, I believe, another 20 or so members of the public
observing this from six other locations around Gulf Breeze. The team then

traced a course with a beam from above the five objects down onto the beach, suggesting to the objects that they move along this line to ground level. Two objects broke away from the five, and moved along that beam. But they stopped, took up a hovering position directly over the observers there. They maintained their position for quite some while, and at that point, through binoculars, all of them, Steven included, could see the structural detail of those objects. At this point, the objects gave out two flashes of white light, and all of them, the two and the remaining three, just simply disappeared.

A CBS television film crew was there on the following Tuesday filming something quite different. Some of Steven's team were still in the area. I don't know how they made contact with one another, but apparently they suggested to CBS that they should stay and that Steven's team would have a second try at this. They did, and the television crew filmed two UFOs, which responded similarly. Quite an extraordinary case.

If it is as reported, we have something here of great importance. Steven and his team will be coming over to Britain, and carrying on that particular process over the fields where these markings have appeared. I have a very positive feeling about this, as Steven does himself. We may well be entering a critical phase.

Response to a sick molecule

SI: Could you talk a bit about what you believe the crop circles mean?

CA: We are entering a very crucial and important phase in our evolution. The crop markings are only a part of a major shift in the consciousness of mankind, and moving us forward, probably the biggest leap forward in our evolution in history.

In terms of this planet, I believe that we are looking at a single, living molecule. The Gaia theory makes perfect sense to me, that we are indeed looking at a living planet, a living organism. It's what the indigenous peoples have always tried to tell us. They have survived only because they

have understood how to interact with nature. They found their place in nature.
We are here in a material way, and are on a course to folly. We have a limited time to put things right. It's 10 seconds to midnight. Unless we learn to harmonize, to interact with all living things, I'm afraid we are going to see the closing down of a living organism on which we rely. This message is also coming from those who are working in pure science right now. We have a big problem. The planet has a big problem. The evidence is there.

I believe that the crop circles are graphic markings that have within them, in their entirety, a meaning. That meaning, and the response to that visual intake, is automatic, because it's within our blueprint. It is within us subconsciously to recognize them. Many people feel this, but they are unable to establish where they've seen them before.

It is, I believe, part of the change of consciousness. There are high levels of energy which are being intelligently placed into position in critical parts of the planet. These, if you like, are probably the chakra points, to give it a term, important energy points of the living organism. They are not random, and they have never been random. They are at specific points, and they recur at those locations. I believe that they are occurring literally at the interface between this dimension of the world that we know quite a lot about and those other dimensions of which we know so very little. We are beginning to see that we can interact in a limited way, directly with other dimensions.

We are seeing, I think, the reaction of the brain end of the universe, the thinking end, which is automatically responding to a very sick molecule. If you were to cut your finger, the brain end of your universe, your head, would react subconsciously to that. You certainly wouldn't be saying, "Send me haemoglobin and white corpuscles." But the brain end automatically responds.
If we could watch the processes going on within your framed universe, what we would see in a microscope is white blood corpuscles moving to that point and interacting. The behavioural tendency would be the equivalent of the UFO. That would be the UFO response from the brain-end of the universe to this planet.

That's the analogy.

The manifestation to come

SI: In the video 'Undeniable Evidence' you say that this crop circle phenomenon is leading to a manifestation of some type. What do you think is going to happen?

CA: I have felt for quite some years that we are certainly going to experience something of great magnitude. It is going to be very soon. We are going to encounter something here which I don't think any man or woman is going to doubt.

This coming few months is going to see one or two events which are going to shake the world. It is going to focus our attention and the reality of knowing we are not the only thinking components of this living planet. We are going to be stunned into accepting that we have much more to consider.

SI: Do you have a bottom line? Do you know what it's going to be, but hesitate to make it known in public?

CA: I do, because I still feel it is most important at this juncture, as it has been for the last 10 years, that this research, this effort at disseminating what we already know about this phenomenon, must be kept rational.

SI: You believe this event will take place soon, and will leave no doubt that we are not alone here. Is that the main purpose of these events?

CA: It is indeed. We will be receiving assistance of new knowledge, new abilities, because we will be working at a different level. We will see manifestations of the Fatima** type. That is the picture that is in my mind. It is a very clear picture. I see certainly a Fatima-type experience occurring. I believe it will be in the vicinity of Silbury Hill, Stonehenge, Avebury in southern England, because that's where the focus of attention is.

There has to be a reason why this is happening right there. Having said that, I believe that will be the door opener. The whole world is going to experience something of tremendous importance.

Close to a Golden Age

SI: What you are saying correlates in some ways with Benjamin Creme's message.

CA: I would like to say on the record that I have great respect for Benjamin Creme's work. Indeed, I hope to meet him. I have read a fair bit of your magazine, in fact.

The thinking end, the brain end of the universe is the way I have been putting it in recent times. We could easily fall out with society here because there is potential for great difficulty when we are talking about the thinking component of the universe. That could be Jesus. It could be God. It could be extraterrestrial. It could be high nature. I don't feel that we have time to fall out over that. We have something which has thought, something which is intelligently interacting with us, and providing us with proof of its existence.

SI: I believe that all of these phenomena are very much connected. I think the appearance of the Teacher, the crop circles, the UFOs, are all working together to raise the consciousness of humanity. That's my opinion.

CA: It's one that I share totally. We are living in special times. There is no doubt that at this time next year, the world is going to be very different. We are living very close to a Golden Age. I really feel that. But equally, one has to say a word of warning, that always there are equal quantities of blackness right alongside. It's as easy to get it wrong as it is to get it right. We have to put out that white light, to put out there positive thinking, with sincerity and good heart. At the end of the day, we'll be doing all we possibly can for humanity.

It is also worth bearing in mind the Hopi Indian prophecy. We have

reached a stage at the very end of the evolutionary path where the Hopi are awaiting the white man who left their land to return with the missing piece of a tablet on which there will be the signs. I would suggest to you that if we can focus our attention on the crop circles and the interaction with the UFO, in the very near future we will appreciate that the signs have arrived. As the Hopi prophecy shows, we are about to hold and shake the hand of the Spirit, the very Spirit that started us on this path.

*Linda Moulton Howe, an award-winning documentary filmmaker and a UFO researcher, has helped to co-ordinate Dr Levengood's work. Howe had these comments at a recent conference in San Francisco:

"Dr Levengood has found under microscopic examination that in the plants that were affected, the cell pits -- the tiny holes in cells of plants where fluid moves back and forth, and keep the plants growing and healthy -- have been expanded. The only way that Dr Levengood could duplicate this cell pit separation was to put plants inside of a microwave for up to 30 seconds. He's not saying that it's microwave radiation that did it. He's saying that rapid heating was the only way he could duplicate the cell pit separation in the plants.

"Further, a nuclear design engineer in Tennessee has done preliminary work on some soil samples and has found that there were three different types of isotope changes that were found in the soil underneath at least two crop formations. That work is now considered to be tentative. They need many more soil samples from many more formations to make any kind of definitive scientific presentation. But at least the preliminary findings are intriguing because they suggest that some kind of energy is being applied in the formation of these crop circles that is not understood."

**Three children in Fatima, Portugal, reported a series of visions of the Virgin Mary in 1917. The experiences culminated in October of that year in a

manifestation which included miraculous phenomena witnessed by thousands.

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From rutkows@ccu.umanitoba.ca (Chris Rutkowski) Mon Aug 24 15:14:53 1992
Path: igor.rutgers.edu!rutgers!usc!elroy.jpl.nasa.gov!swrinde!mips!decwrl!access.usask.ca!ccu.umanitoba.ca!rutkows
From: rutkows@ccu.umanitoba.ca (Chris Rutkowski)
Newsgroups: alt.alien.visitors
Subject: Latest NAICCR info on crop circles
Summary: Latest NAICCR list of crop circles and UGMs
Keywords: north america, crop circles, NAICCR
Message-ID: <1992Aug24.191453.29996@ccu.umanitoba.ca>
Date: 24 Aug 92 19:14:53 GMT
Organization: University of Manitoba, Winnipeg, Canada
Lines: 141

1992 North American Crop Circles and/or UGMs
Reported to NAICCR as of 24 August 1992

920426 Jonesboro, Georgia
- a "formation" of crop circles, "exactly" like those found in 1991 in the same location, was discovered.
Source: Rosemary Ellen Guiley; Vance Tiede

9204?? , New Hampshire
- UGMs were found following a small local flap of UFO reports.
Source: Rosemary Ellen Guiley; Vance Tiede

920506 near Edmonton, Alberta
- a "space cookie" UGM was discovered in a meadow. It is a perfect circle, 6 metres in diameter. Its depth varies from 5 cm to 31 cm. Grass is growing straight up both inside and outside the circle. No tracks were found leading to the area. The UGM is not a sinkhole.
Source: Gordon Kijek

920525 Limerick, Pennsylvania
- at least 12 "matted down" areas were found in a wheatfield north of Philadelphia. Three were circles about five feet in diameter, arranged in a triangle. One feature was "T-shaped". Soil samples taken by a UFO investigator "showed no irregularities". Geiger counter readings were also normal. Although a hoax was suspected by the UFO investigator, the owner of the field believes that the UGMs were caused by lodging, wind and fertilizer damage, and that "It happens every year".
Source: Steve Bernheisel on FIDONET; UFO Newsclipping Service #275

920627 Raeford, North Carolina
- a circle of flattened grass was found in a hay field following a CE2 UFO sighting. A loud noise, "like a freight train", was heard, and two witnesses ran to look out their front door. A object "the size of a swimming pool", "like orange windows lla around it", was in a field about 300 feet away from their house. When they went to call other witnesses, the object disappeared.
Source: Patrick Kirol on FIDONET

9206?? , Massachusetts
- a small area of flattened cattails was found in a marsh close to a major highway and reported as a crop circle.
Source: Tom Randolph on DEC COM via INTERNET

920701 St. Adolphe, Manitoba
- nine "horseshoe-shaped" patches of flattened grass were found on either side of a brook in a Winnipeg suburb. Because of rece storms and heavy rainfall, lodging was thought to be the cause
Source: Guy Westcott; NAICCR

920705 Hobbema, Alberta
- two ovals of flattened barley were found in a field after unusual lights were observed descending to the ground. The largest UGM has a major axis of 47 feet. The crop is pushed away uniformly from the centers of the patches, but the centers are "clumped", like breaking waves. Barley inside the circles is "white", and devoid of colour. It was later suggested that the areas
were due to spilled seeds and fertilizer, combined with lodging.
Source: Gord Kijek

920715 St. Adolphe, Manitoba
- a field beside a highway was discovered to have numerous patches of
flattened crop, in irregular patterns. The formations were discovered
by the same person who found case 920701. Investigation by NAICCR and
interviews with the owner of the field established that the crop had
been laid down by strong winds and heavy rain. The person who discovered the formations was convinced that aliens created the flattened patches.
Source: NAICCR

920721 Friedensruh, Manitoba
- a farmer found a triangular area of flattened/swirled grass which
was surrounded by an electric fence. The dimensions were 31x27x17
feet. Local residents could not explain the phenomenon. However,
NAICCR investigators found evidence that animals had trampled the site.
Source: NAICCR

920799 Pilot Peak, California

- according to the Phoenix Project, a number of "landing zones" were discovered near the site of an alleged underground alien base. Visits to the site by independent invesyigators have found only patches of grass trampled by deer and other animals. Two "landing zones" were claimed.
Source: John Pickens on INTERNET via Paranet

920799 Miniota, Manitoba
- it was reported that a crop circle was discovered in a field of oats. The circle is perfectly round and 32 feet in diameter. The oats are flattened and swirled in a clockwise fashion. The center of the circle is devoid of vegetation.
Source: NAICCR

920801 Strathclair, Manitoba
- a circle of flattened wheat was discovered in a field southwest of Strathclair. It was 28 feet in diameter. The wheat was flattened and swirled in a counterclockwise fashion.
Source: NAICCR

920808 Strathclair, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars (a circle with an attached arrow pointing away from it) was discovered in a field southwest of Strathclair. The main circle was 28 feet in diameter, with no detectable eccentricity. The wheat was flattened counterclockwise. In the arrow, the wheat was flattened away from the circle. The arrow pointed on a bearing of 260 degrees.
Source: NAICCR

920815 Ipswich, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars was discovered just east of Ipswich. The main circle was elliptical, with axes 26 and 24.5 feet. The wheat was flattened counterclockwise. The arrow pointed on a bearing of 65 degrees.
A large, dark object with yellow lights was seen hovering over the site the night before the formation was discovered.
Source: NAICCR

920815 Strathclair, Manitoba
- a flattened area of wheat was found near other crop circle UGMs. It

was roughly 20 feet in diameter. Wheat was laid down in random clumps.
Examination suggested the area was caused by lodging.
Source: NAICCR

920815   Strathclair, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars was
discovered west of Strathclair. The main circel was 24 feet in diameter. The wheat was flattened in a counterclockwise fashion. The
arrow pointed on a bearing of 120 degrees.
Source: NAICCR

920817   Brandon, Manitoba
- a television station received an anonymous call that a crop circle
had been found on the property of the Brandon airport.
Source: CKX-TV

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Chris Rutkowski - rutkows@ccu.umanitoba.ca
Royal Astronomical Society of Canada
University of Manitoba - Winnipeg, Canada

From rutkows@ccu.umanitoba.ca (Chris Rutkowski) Mon Aug 24 16:19:11 1992
Path:
igor.rutgers.edu!rutgers!att!pacbell.com!mips!decwrl!access.usask.ca!ccu.umanitoba.ca!rutkows
From: rutkows@ccu.umanitoba.ca (Chris Rutkowski)
Newsgroups: alt.alien.visitors
Subject: NAICCR Report on Crop Circles
Summary: Report on recent crop circles and UFOs
Keywords: crop circles, NAICCR, north america, report
Message-ID: <1992Aug24.201911.7372@ccu.umanitoba.ca>
Date: 24 Aug 92 20:19:11 GMT
Organization: University of Manitoba, Winnipeg, Canada
Lines: 312

NAICCR (North American Institute for Crop Circle Research)

Report on Investigations of Crop Circles
in the Area of Strathclair, Manitoba

18 August 1992

Following media reports about several new crop circles in western Manitoba, NAICCR representatives travelled to the area for onsite investigations.

Five crop formations were discovered, one of which was easily explained as lodging. Of the other four, three were in

the shape of the symbol for Mars: a circle with an attached arrow.
Two were alongside a major highway, while the others were next to less-travelled farm roads. The two near the major highway were apparently made on the night of 14-15 August 1992.

Rumours of the circles spread through the community, and many people went to see the formations. By Monday, 17 August 1992, an estimated 200 people had visited the sites. News media mentioned the sites in newscasts on 17-18 August, but the formations did not attract the wide publicity that other, less impressive and explainable formations had garnered a month earlier. NAICCR investigators were able to visit the sites on 18 August 1992, after a four-hour excursion from Winnipeg.

Wheat and soil samples were taken from all sites. Mapping was done, though, because of excessive trampling of the formations, measurement errors of about six inches were possible. Compasses were employed, but no magnetic anomalies were detected. Both VHF and AM/FM radios were tested, but no interference was detected. Tape recordings taken at the sites were unaffected. No unusual sounds were heard, and no unusual "feelings" were sensed. Insects were present in normal quantities at the sites. According to residents, animals were not afraid to enter the areas.

At one formation, two youths guarded the entrance and brandished a sign reading: "A Loonie a Look"; they charged a dollar to anyone wanting to enter the site. [Note: "loonie" is a slang
term for a Canadian dollar coin.]

At Strathclair No.4, two NAICCR investigators decided to try an experiment in circle creation. They walked between the rows of wheat into an unaffected area and began walking around in a circle. After five minutes, they had produced a circle of comparable size to Strathclair No.4. The new circle was swirled and flattened, and examination of wheat stalks showed no breakage whatsoever. The stalks were only gently bent at a height of about one to two inches above the ground, and did not appear to have been subjected to any force. The appearance of the new circle was relatively "messy", but after a few minutes of "touch-ups", it began to look more like the "real" circle. Suggestions were offered as to ways in which more even flattening could be produced. Since Strathclair No.4 was created on the night of 14-15 August 1992, only a few days after full Moon, it was proposed that a hoaxer could easily have created the formation without any flashlights and ducked down below the level of the five-foot-high wheat when an occasional car passed by.

The hoax theory is complicated by a CE1 UFO
sighting over the field where the Ipswich formation was discovered. One close witness and two other witnesses observed an unusual object moving over the field and then fly away on the night that that formation was likely created.

On the night of 14 August, a television program about crop circles had been aired. Residents of the area had recalled

seeing the episode. However, at least two of the formations had been discovered before the program was aired. It is not thought that the television program had necessarily precipitated the later
formations.

Wheat samples will be given to several researchers for testing. As some cerealogists have claimed that seeds from plants inside circles grow faster/better than those from a control sample, double-blind tests of this theory will be performed. Further investigations are continuing.

Descriptions of the formations follow, along with a number of UFO
reports from the same time period.

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Strathclair, Manitoba UGM 920801.1
Found: 1 August 1992

A circle of flattened wheat was discovered in a field southwest of Strathclair. It was 28 feet in diameter. The wheat was flattened and swirled in a counterclockwise direction. The circle was approximately 40 feet from a municipal road.

Known as Strathclair No.1.

Reported to the media on 16 August 1992. NAICCR investigation was on 18 August 1992. The site had been badly trampled by visitors during the interim.

Strathclair, Manitoba UGM 920808.1
Found: 8 August 1992

A flattened area of wheat in the shape of the symbol for Mars was discovered in a field southwest of Strathclair. The main circle was 28 feet in diameter, with no detectable eccentricity. The wheat was flattened and swirled in a counterclockwise direction. The formation was approximately 40 feet from a municipal road, directly opposite a circle which had been discovered a week earlier.

In the arrow, the wheat was flattened away from the circle, following the lines of the arrow. The arrow pointed away from the circle on a bearing of 260 degrees. The arrow was 18.5 feet in
length, with left and right arms of 6 and 6.5 feet in length, respectively. The width of the arrow was approximately 36 inches. The arrow pointed almost directly away from the road.

Known as Strathclair No.2.

Reported to the media on 16 August 1992. NAICCR investigation was on 18 August 1992. The site had been badly trampled by visitors during the interim.

Ipswich, Manitoba UGM 920815.1
Found: 15 August 1992

A flattened area of wheat in the shape of the symbol for Mars was discovered in a field just east of Ipswich. The main area was 26 feet in diameter along its major axis and 24.5 feet along its minor axis. The wheat was flattened and swirled in a counterclockwise direction.

In the arrow, the wheat was flattened away from the circle, following the lines of the arrow. The arrow pointed away from the main area on a bearing of 65 degrees. The arrow was 17.5 feet in
length, with left and right arms 7.5 and 11 feet in length, respectively. The width of the arrow corridor was 28 inches. The arrow pointed toward a farm road, its tip being only 36 feet from the road.

Known as Ipswich.

Reported to the media on 16 August 1992. NAICCR investigation was on 18 August 1992. The site had been badly trampled by visitors during the interim.

A UFO had been seen at the site on 14 August 1992.
See: ND Case 920814.1 in UFOROM files.

Strathclair, Manitoba UGM 920815.1
Found: 15 August 1992

A flattened area was found in a wheat field near other crop circle UGMs. It was roughly 20 feet in diameter. Wheat was laid down in random clumps, and some sections had rebounded upright. The area was visible from a nearby road. Examination suggested the area was caused by lodging.

Known as Strathclair No.3

Reported to the media on 16 August 1992. NAICCR investigation was on 18 August 1992. The site had been trampled by visitors during the interim.

Strathclair, Manitoba UGM 920815.1
Found: 15 August 1992

A flattened area of wheat in the shape of the symbol for Mars was

discovered in a field southwest of Strathclair. The main circle was 24 feet in diameter, with no detectable eccentricity. The wheat was flattened and swirled in a counterclockwise direction. The formation was approximately 100 feet from a provincial highway.

In the arrow, the wheat was flattened away from the circle, following the lines of the arrow. The arrow pointed away from the circle on a bearing of 120 degrees. The arrow was 16 feet in length, with left and right arms of 8.5 and 10 feet in length, respectively. The width of the arrow was approximately 66 inches. The arrow pointed away from the road.

Known as Strathclair No.4

Reported to the media on 16 August 1992. NAICCR investigation was on 18 August 1992. The site had been badly trampled by visitors during the interim.

Brandon, Manitoba — UGM 920817.1
Reported: 17 August 1992

A television station received an anonymous call that a crop circle had been found on the property of the Brandon airport.

Investigations pending.

Miniota, Manitoba — UGM 920799.1
July, 1992

It was reported that a crop circle was discovered in a field of oats. The circle is perfectly round and 32 feet in diameter. The oats are flattened and swirled in a clockwise direction. The center of the circle is devoid of vegetation.

The circle was found "in mid-summer". It was reported to NAICCR on 21 August 1992.

UFO Reports:

Ipswich, Manitoba — ND Case 920814.1
14 August 1992
2115 local time

A woman was driving east from Shoal Lake to Strathclair when she saw a pair of bright yellow lights over a field to her left. The lights appeared to be about 50 to 100 feet above the ground. She stopped her car to get a better look, and watched as the lights moved in tandem, one above the other, progressing over the field

heading west. As it was not quite dark, she was sure that she could see a dark object behind the lights, with another very small flashing light at its "tail".

The witness' daughter and son-in-law were following in their own car, and they also saw the object before it moved out of view behind some trees. The object was visible for about two minutes as it progressed slowly over the field. No noise was heard.

Reported to the media on 15 August 1992.

The next day, a crop circle UGM was discovered in the wheat field over which the UFO had travelled. See NAICCR case 920815.1

Shoal Lake, Manitoba NL Case 920814.1
14 August 1992
2300 local

A witness reported seeing a brilliant green flash of light which illuminated the countryside.

Source: Greg Nesbitt

Shoal Lake, Manitoba NL Case 920815.1
15 August 1992
2200 local

A witness reported seeing a brilliant green flash of light which illuminated the countryside. It was visible for "a few seconds".

Source: RCMP, Shoal Lake Detachment

Winnipeg, Manitoba NL Case 920826.1
26 August 1992
0535 local

A witness reported a bright green object, "like an airplane going to crash". The object was rapidly moving from the west to the east, but looked like it was "going up". The object had a "long tail". It appeared to be over the Winnipeg airport. It was visible for only a few seconds.

Source: Anonymous phone call from the witness to UFOROM.

A full report on the incidents, with detailed drawings of the crop

formations, will be available in hard copy from NAICCR at a later date.
The full report will be published in a major UFO journal and cerealogy
journal. The Strathclair flap of UGMs and UFOs will be noted in the
annual NAICCR and UFOROM reports when published in 1993.

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For further information, contact:

NAICCR (North American Institute for Crop Circle Research)
Box 1918
Winnipeg, Manitoba
Canada   R3C 3R2

On INTERNET, e-mail can be addressed to:

rutkows@ccu.umanitoba.ca

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--
Chris Rutkowski - rutkows@ccu.umanitoba.ca
Royal Astronomical Society of Canada
University of Manitoba - Winnipeg, Canada

From mcgrew@klinzhai.rutgers.edu (Charles Mcgrew) Sun Oct 11 21:45:20 1992
Path: igor.rutgers.edu!klinzhai.rutgers.edu!mcgrew
From: mcgrew@klinzhai.rutgers.edu (Charles Mcgrew)
Newsgroups: alt.alien.visitors
Subject: Re: crop circles
Message-ID: <Oct.11.21.45.19.1992.7061@klinzhai.rutgers.edu>
Date: 12 Oct 92 01:45:20 GMT
References: <cass8806.307@elan.glassboro.edu>
Organization: Rutgers Univ., New Brunswick, N.J.
Lines: 47

> cass8806@elan.glassboro.edu (KYLE CASSIDY) writes:
> are there any books out about those crop circles which were
> popping up in europe?

... there are some books, and some magazines that I know of:

Magazines:
The Cerealogist, 20 Paul St., Frome, Somerset, BA11 1DX, England
The Circular, 58 Kings Rd., West End, Woking, Surrey GU24 9LW, England
The Crop Walker, 3 Selborne Court, Tavistock Close, Romsey, Hampshire, SO51 7TY, England

Some books and papers:

The Crop Circle Enigma, edited by Ralph Noyes, Gateway Books, UK.

Crop Circles, the Latest Evidence, Pat Delgado and Colin Andrews, Bloomsbury Publishing, UK

North American Crop Circles and Related Physical Traces in 1990 - available from NAICCR (see below).

"Crop Circles: The Mystical View" and "How to Measure a Crop Circle", MUFON Journal #278, June 1991.

Summer 1991 Crop Circles - available from Fund for UFO Research (see below).

"Summer 1991 Crop Circles" -- condensation of the above report, MUFON Journal #282, October 1991.

"Once Upon a time in the Wheat", and "English Hoax Update", MUFON Journal #284, December 1991.

"The Circles of Summer", MUFON Journal #293, September 1992.

North American CC organizations:

North American Institute of Crop Circle Research, 649 Silverstone Avenue, Winnipeg, Manitoba R3T 2V8, Canada.

North American Circle, PO Box 61144, Durham, NC 27715-1144

Other addresses:

Fund for UFO Research, PO Box 277, Mount Rainier, Maryland, 20712.

MUFON, 103 Oldtowne Road, Seguin, TX 78155

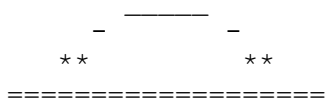
Hope this helps,

Charles

From: rutkows@ccu.umanitoba.ca (Chris Rutkowski)
Newsgroups: alt.alien.visitors
Subject: 1992 NAICCR Crop Circle Report
Summary: crop circle report available
Keywords: crop circles, UGMs, NAICCR
Message-ID: <C4At18.DtM@ccu.umanitoba.ca>
Date: 22 Mar 93 16:12:43 GMT
Sender: news@ccu.umanitoba.ca
Organization: University of Manitoba, Winnipeg, Canada
Lines: 942
Nntp-Posting-Host: ccu.umanitoba.ca

Thanks to David Thacker of AUFOSG, the 1992 NAICCR Report on Crop Circles and UGMs in North America has been scanned in and is hereby
made available online:

>From 70744.3253@compuserve.com Sun Mar 21 21:52:27 1993
Date: 21 Mar 93 22:42:57 EST
From: David Thacker <70744.3253@CompuServe.COM>
Subject: 1992 NAICCR UGM Report



NORTH AMERICAN CROP CIRCLES and RELATED PHYSICAL TRACES REPORTED IN 1992

A Study Conducted by the North American Institute for Crop Circle Research

Winnipeg, Manitoba
Canada

February, 1993

This study was conducted by the North American Institute for Crop Circle Research in conjunction with Ufology Research of Manitoba. Research associates with NAICCR and UFOROM include:

Roy Bauer, Grant Cameron, Jeff Harland, Chris Rutkowski, Vladimir Simosko and Guy Westcott

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Thanks are due to the following people who significantly assisted NAICCR in its research:

Chad Deetken, Rosemary Ellen Guiley, Gordon Kijek, Colin McKim, Ted Spickler, Michael Strainic, David Thacker and Pamela Thompson

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Contributing groups and organizations:

North American Institute for Crop Circle Research
649 Silverstone Avenue, Winnipeg, Manitoba, Canada R3T 2V8

Ufology Research of Manitoba
Box 1918, Winnipeg, Manitoba, Canada R3C 3R2

Alberta UFO Study Group
P.O. Box 38044, Capilano Postal Outlet, Edmonton, Alberta, Canada T6A 0Y0

Center for North American Crop Circle Studies
P.O. Box 4766, Lutherville, Maryland 21094 USA

Pacific Research
2743 West 6th Avenue, Vancouver, BC, Canada V6K 1W9

Mutual UFO Network
103 Oldtowne Road, Seguin, Texas 78155-4099 USA

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Thanks are due to those who sent information to NAICCR for the purposes of this study. Their contributions were greatly appreciated.

This report was prepared by Chris A. Rutkowski

Published by:

North American Institute for Crop Circle Research
in conjunction with
Ufology Research of Manitoba

North American Crop Circles and Related Physical Traces Reported in 1992

Since 1990, NAICCR (North American Institute for Crop Circle Research) has been requesting and collecting information on UGMs (unusual ground markings) in North America. The 1990 and 1991 NAICCR reports were widely circulated, and have been reprinted in a number of books and publications around the world. The favourable response of the ufology and cerealogical community to NAICCR's efforts has encouraged the continued gathering of data for comparison and analysis.

One of the reasons NAICCR has been making UGM and crop circle data available to researchers is because no comparable reports are produced regarding UGMs in Britain. Various factions and cerealogists are said to maintain extensive databases on crop circles, but the data is normally not disseminated. True, several coffee-table books have been published with remarkable aerial photographs of unique formations, and cerealogy "alphabets" have been circulated which categorize the agriglyphs, but raw data including all possibly relevant parameters is hard to come by. In addition, there is the alleged "hoarding" of crop circle data by some researchers, and the selective winnowing of cases by others.

Since British data has been so elusive to some researchers, NAICCR associates have attempted to gather UGM data from the entire continent of North America, rather than focusing upon the British scene. This has been no small feat. The effective area of North American cerealogy is several times larger than that of Britain, so North American cerealogists have a much more difficult task than their counterparts across the ocean. "Stakeouts" of circle-prone areas are possible in England, but not in America.

The principle which guides the collection and dissemination of crop circle data by NAICCR is the open exchange of information for all those

involved in the field. It has been suggested that the sharing of information and the co-operation between researchers is a vital aspect of both ufology and cerealogy.

In practice, although requests for information are frequently made, relatively few researchers and investigators respond by sending NAICCR the required data. Typically, local investigators send information to regional directors of their organizations, if they send their information to anyone at all. The quality and style of investigations tend to vary considerably, and therefore make comparative studies very difficult. The need for standardization of investigative techniques is clearly an issue in UGM studies.

As a result, information about many UGMs comes by way of second-hand sources, newsletters, magazines, computer bulletin boards and media reports. Some reports of UGMs are nothing more than rumours, despite attempts to substantiate claims and alleged witnesses' accounts. For these reasons, the usefulness of the data is limited. However, it is the position of NAICCR that the collection and publication of this data are important in the development of the field. At the very least, researchers who perhaps read only a few publications can be apprised of the broader aspect of the phenomena, and the variety of the cases.

While it is admirable that many researchers have taken it upon themselves to study specific cases or aspects of UGMs, those who claim expertise or are portrayed as being very knowledgeable of the subject are sometimes poorly versed in the phenomenon. Indeed, some lack the necessary background to speak with authority on UGMs or related phenomena. This has resulted in some "experts" making unscientific or otherwise unsupported claims during media interviews, contributing to misconceptions about the facts of the phenomenon.

The situation is complicated further by the delineation of "camps"

within the UGM field, whether they be vortex theorists, UFO adherents, skeptical refuseniks or ultraterrestrialists. These are additional reasons why an objective presentation of all the raw data from all sources is considered essential in order to gain a more complete understanding of the phenomena. It is the hope of NAICCR that the presentation of North American UGM data in this Report will encourage more co-operation and discussion among researchers at all levels, whether the reader is an armchair theorist, a field investigator or a debunker.

The general position of NAICCR is that no one theory is favourable over any other at the present time. This flies directly against the belief by many skeptics that "all crop circles are hoaxes", and also the belief by many ETH supporters that crop circles are definitely communications from aliens. The hoax issue is not trivial. Debates are raging between cerealogists concerning the fraction of "genuine" formations that have been found.

First of all, we must realize that the exact determination of this fraction is impossible, since we have no exact figure for the number of all UGMs in Britain. Are there 1000 recorded sites since 1980? 2000? 3000? Do the numbers reflect individual UGMs, or complete formations? Is a site with ten "grapeshot" circles counted as "ten" or "one"?

Second, cerealogists have gone on record as saying that hoaxers have become so proficient at their craft that there is now no way to tell a "genuine" circle from a "fake" one. The implications of such a statement should alarm researchers. If hoaxed circles look "genuine", then all circles could be hoaxes just as easily as all circles could be "real".

Third, claims of hoaxing are themselves not proof of hoaxing. Although skeptics would invoke Ockham's Razor and point out that hoaxing is the simplest explanation for crop circles, the problem is more complex than

that. Aside from the Bower/Chorley demonstrations, comparatively few hoaxers have admitted their handiwork and have described their exact method used. This has resulted in many cerealogists adopting a "doubting Thomas" attitude; unless hoaxers are caught red-handed or come forward after the fact with detailed information about their hoax effort, the hoaxers are not to be believed.

In North America, though several individuals have claimed to have hoaxed crop circles, only a few have met the "doubting Thomas" criteria. The situation is much worse in Britain, given the larger number of sites. A common observation among cerealogists is that hoaxing cannot be a viable explanation because thousands of crop circle sites would require huge armies of hoaxers, all of whom were clever enough to make intricate formations without being seen, indeed, in some cases, under the watchful eyes of surveillance cameras.

But are the logistics of hoaxing really that impossible? Since many formations were discovered days or even weeks after they were likely created, they could have been done without any witnesses. By the time many were found, visitors might have trampled tell-tale signs of hoaxing. We do not have accurate figures available on the fraction of sites which were under observation, and which were also investigated prior to visitors. How many of the 1000 (or 2000) UGMs are considered highly reliable?

Let us assume that there is one determined and expert crop circle hoaxer in Britain. Let us also assume that he (or she) made one crop circle per night during a 100-day farming season. This one person could have made all 1000 circles in Britain since 1980!

This is absurd, of course. The time requirements, personal cost, travelling, secrecy and other factors would make this scenario ridiculous. But let us assume that the variables were altered. Suppose there were ten hoaxers. Suppose that ten crop circles were made each night. Suppose that

some circles were created by a mysterious natural or preternatural phenomenon (!). The reader is left to speculate upon other scenarios. This exercise does not, by itself, imply that hoaxing is the most likely explanation for crop circles. However, it puts into perspective the problems of coming to terms with the phenomenon.

What of the other theories? What evidence is there to support the vortex or extraterrestrial theories? In the former, there do exist several dozen recorded cases of eyewitnesses to strong, spiralling downdraughts making circular patches in wheat or tall grasses. Both Ohtsuki and Meaden have presented physical arguments that simple crop circles could be made by wind vortices, and have hypothesized certain physical conditions that might be conducive to crop circle creation (sides of hills, winds, etc.). However, given the difficulty of weeding "genuine" circles from the dross in the data, the theory requires some refining. In addition, a "natural" mechanism would demand the creation of formations in great numbers around the world, not just confined to a small area in Britain. Perhaps, the NAICCR reports will serve to support the theory.

On the other hand, TIF (Theory of the Intelligent Force) seems supported by eyewitness accounts and videos of unusual lights or structured objects near crop circle sites. Some vortex theorists might say these are special cases of plasmas in action, but some TIF proponents insist that added factors such as weaving and complex patterns rule out a natural mechanism.

In terms of physical changes within crop circles, results are interesting, though not completely satisfying. Tests have shown no sites to have residual radioactivity, despite earlier heralded claims to the contrary. Spagyrical analyses, dating back to the days of alchemy and not given much scientific weight today, attempted to show "crystallization" of plant cells from within crop circles. This evidence is not as credible as

many would believe. We are left with the body of evidence produced through analyses by Dr. W. Levengood of Pinelandia Biophysical Laboratories. His results, published in a series of reports, purport to shown "changes" or otherwise significant abnormalities in samples taken from circle sites. The prospect of proving abnormalities within crop circles using these results is very exciting, though it would be preferable if other independent laboratories could confirm the effects.

Results of the 1992 Study

As of 31 January, 1993, there had been 93 UGMs (unusual ground markings) reported or otherwise communicated to UFOROM (Ufology Research of Manitoba) or NAICCR during the 1992 calendar year. These represented only 40 different sites or locations; some cases had multiple associated UGMs. The set of UGMs includes those features commonly called "crop circles" as well as features known as "saucer nests", "space cookies", "burn marks" and "landing traces".

The UGMs were classified in the following categories:

1. FC - Flattened Circle
2. FR - Flattened Ring
3. BC - Burned Circle
4. BR - Burned Ring
5. BF - Burned and Flattened
6. CR - Concentric Ring
7. VM - Vegetation Missing
8. VD - Vegetation Dead
9. YG - Yellowing of Grass
10. SG - Stunted Growth
11. EG - Enhanced Growth
12. DP - Depression
13. HO - Hole
14. OT - Other

The classification system is not mutually exclusive, and some sites may contain more than one category of UGM.

A problem in the statistical tabulation of UGM data is the lack of standardization in the counting of the UGMs. At some sites, only a single UGM is observed, while at others, there may be dozens. Some researchers

have chosen to count each UGM separately, but many count features according to sites. A "quadruplet" may therefore be counted as "4" or "1", depending on the system used. A more complex feature such as an "agriglyph" poses additional problems: is a count of its component circles, triangles, etc., of real analytical value? The NAICCR data is presented with both counting schemes; researchers can adopt their own systems for interpretation.

It is interesting to note that the number of UGMs per year has remained about the same since 1990. This might suggest that UGMs are a continuing, constant phenomenon like their cousins, UFOs.

UGMs per Year

	1990	1991	1992
# UGMs	86	87	93
# Sites	45	37	40

UGMs in North America in 1992

	Canada	%	USA	%	Total
Total UGMs	47	50.5%	46	49.5%	93
# Sites	21	52.5%	19	47.5%	40

Of the 93 total UGMs found in North America, 47 (50.5%) were in Canada and 46 (49.5%) were in the United States. When the number of sites is examined, the distribution is essentially the same: 21 (52.5%) in Canada and 19 (47.5%) in the United States. When compared with previous years, the 1992 data suggests several things. First, the number of reported UGMs in North America is constant, averaging around 90 UGMs/year. Second, it would appear that the ratio of UGMs/sites is also constant, with a value near two. In other words, the typical UGM case involves at least two impressions/effects, and are more properly called formations.

If we assume that the mechanism for reporting North American UGM cases is relatively constant, this data does seem to show a "background" level of UGM activity, something that had been suspected by some researchers. More to the point, it suggests that the huge numbers of crop circle UGMs in Britain are an anomaly. Some would read this as a confirmation of widespread hoaxing and contamination of British UGM data. To others, this implies that the British hills and valleys are host to a truly unique phenomenon, incomparable to UGM activity elsewhere in the world. Indeed, the constancy of the American numbers seems to show that American and British UGM activity, specifically that of crop circles, are different effects with different causes. Why this is so is not completely clear at this time.

As in previous years, there was an uneven distribution of UGMs throughout North America in 1992. Significant numbers of cases were reported in Manitoba and Saskatchewan, which had few UGMs reported in 1991. Illinois had the largest number of American cases in 1992, as in previous years.

There was a strong, significant difference in the direction of swirl reported for crop circles. Of the cases for which swirl data was reported, 28 swirls were counterclockwise, and only one was clockwise. All swirled UGMs were in Canada.

Distribution of UGMs in States and Provinces

State/Province	USA/CDN	# UGMs	# Sites
Alberta	Canada	18	3
Arizona	USA	3	1
California	USA	2	1
Georgia	USA	2	1
Illinois	USA	8	4
Iowa	USA	1	1
Manitoba	Canada	20	11
Massachusetts	USA	1	1
Minnesota	USA	2	1
Missouri	USA	1	1

New Hampshire	USA	1	1
North Carolina	USA	1	1
Ohio	USA	2	2
Ontario	Canada	1	1
Pennsylvania	USA	12	1
Saskatchewan	Canada	8	6
South Dakota	USA	1	1
Tennesee	USA	9	2

Number of UGMs by Crop and Country

Crop	USA	Canada
Alfalfa	5	
Barley		2
Corn	1	1
Grass	15	11
Ice	1	
Oats		3
Potatoes	1	
Wheat	21	30

The diversity of the crops affected by UGMs is evident in the above table. The public impression that crop circles appear exclusively in wheat is clearly wrong. Furthermore, the British label of "corn circles" is also a misnomer for North American cases, though this is due more to idiom than botany. Some researchers such as AUFOSG have noted this problem of crop identification, and have included the proper scientific names of affected UGM crop in their reports. If other groups adopt this system, it may alleviate some confusion.

The most marked change from 1991 is the increase in wheat formations in the United States. There were 21 in 1992, but only 1 in 1991. Otherwise, UGM activity was as varied as in previous years.

Number of UGMs by Crop (When Specified)

Crop	# UGMs
Alfalfa	5
Barley	2
Corn	2
Grass	26

Ice	1
Oats	3
Potatoes	1
Wheat	51
Not Specified	2

Number of UGMs by Type (When Specified)

Type	USA	Canada
Flattened Circle	33	15
Flattened Ring	2	20
Hole		1
Vegetation Dead	1	
Vegetation Missing	1	
Yellowed Grass	1	
Other	2	11
Not Specified	6	

In 1992, the average diameter of UGMs was 10.62 metres. In 1991, the average diameter of UGMs was 7.06 metres. The 1990 average was 10.7 metres.

The "UFO Connection" to UGMs and crop circles alleged by some researchers is not borne out by the 1992 data. UFOs were reported in conjunction with only 4 UGM sites, representing 10% of the cases. We can note that Ted Phillips' Catalog of Physical Traces Associated with UFO Sightings, published in the 1970's, had a similar fraction of cases. Many of the UGMs listed in his Catalog had no associated UFO activity. In other words, the overall characteristics of trace cases and UFO effects have not changed dramatically over the years; only our identification and naming the sites as "crop circles" instead of "physical traces" has evolved.

In 26 UGMs (28%) or at 8 sites (20%), winds were noted as a possible explanation. As many as 18 UGMs (19%) at 8 sites (20%) were given probable explanations. As can be seen in the annotated list of cases, cerealogists are rapidly gaining expertise in crop effects such as lodging and blights.

The characteristics of 1992 UGMs varied considerably. As many as 11

UGMS (12%) at 7 sites (17.5%) were described as possessing "corridors". No complex formation such as the Coalhurst structure of 1991 was discovered, though smaller oddities such as "dumbbells" and "Mars symbols" were noted in 1992.

The listing of UGM data does not include any indication of the investigations and conclusions reached by researchers regarding the cause or reason for the existence of the features. The limited information available for these analyses precluded any extensive discussion of the individual cases. Some information about the cases will be found in the annotated case list later in this report. Sources of information about the cases are provided, but researchers intending to use this data in their own studies are cautioned that NAICCR cannot vouch for the accuracy of reports.

The question of physical or physiological effects reported at UGM sites should also be addressed here. It has been claimed that electronic interference is sometimes experienced within or in the proximity of British crop circles. Convincing support for this claim is much debated, but such effects have been noted in many cases, usually as an indication that UFOs have been involved. Sometimes, vortex theorists imply that these effects may be related to plasma activity in the surrounding area.

In both 1991 and 1992, several North American UGM sites were claimed to have associated effects. Some sites were said to exhibit a positive effect when dowsed, while other sites produced eerie "energy", detected by sensitives. Unfortunately, these effects do not seem to be consistent, and are not experienced by all witnesses or investigators at the same site.

It is hoped that research into UGMs will benefit from studies of the raw UGM data. Researchers are urged to examine the data presented and prepare their own interpretations in order to further develop their theories about the origins of UGMs or the specific category of crop

circles.

Chris A. Rutkowski
Ufology Research of Manitoba
North American Institute for Crop Circle Research February, 1993

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Coding Key for UGM Data

EXAMPLE:

```
920827,TORONTO           ,ON,CN,03,BY,FC,CC,  4.80,  4.50,
---,CDMUW ,37

  D      S               R  C  N  C  T  S     D      D      W
O     U
  A      I               E  O  U  R  Y  W     I      I      I
T     G
  T      T               G  U  M  O  P  I     A      A      D
H     M
  E      E               I  N  B  P  E  R     M      M      T
E
                         O  T  E        L                   H
R     N
                         N  R  R             1      2
O
                            Y
```

DATE: 6-digit code of the form: YR/MO/DA

SITE: Geographical location nearest the UGM, such as a town, city, hamlet, etc.

REGION: State or Province, as a standard 2-digit code

COUNTRY: US or CN

NUMBER: Number of UGMS at the site; if only one, then one entry: 01; if two, then two entries: 01 and 02; if three, then 01, 02, 03; etc.

CROP: 2-digit code for crop: AL = Alfalfa; BY = Barley; CN = Corn; GR = Grass; IC = Ice; OA = Oats; PO = Potatoes; WH = Wheat

TYPE: 2-digit code for UGM type: BC = Burned Circle;

	FC = Flattened Circle; FR = Flattened Ring; HO = Hole;
	OT = Other; SG = Stunted Growth; VD = Vegetation Dead;
	VM = Vegetation Missing; YG = Yellowed Grass
SWIRL:	CC = Counterclockwise or CW = Clockwise
DIAM 1:	Diameter of UGM in metres
DIAM 2:	Perpendicular diameter in metres (for eccentric,
	elliptical or irregular UGMs)
WIDTH:	Width of ring in metres (for UGMs that are rings
	rather than whole circles)
OTHER:	Miscellaneous comments: A = Animal reactions reported;
	C = Corridor; D = Dowsed; E = Explained;
	G = Agriglyph; H = proven Hoax; I = Insufficient Data;
	M = other Marks or Traces; P = Physiological effects;
	R = Radiation detected; S = Samples taken; T = Tests
	on soil or vegetation performed; U = UFO sighted;
	W = Wind effects
UGM NO.:	Numerical assignment in listing

[Note: the following data table may be cut out and imported into most
database programs as an ASCII delimited file - dAvid tHacker]

North American UGMs Reported in 1992

```
920320,DUNDEE             ,OH,US,01,GR,VM,  ,  9.20,  8.30,
,MST   ,1
920400,                   ,NH,US,01,  ,  ,  ,      ,      ,
,IU    ,2
920400,                   ,IA,US,01,IC,  ,  ,      ,      ,
,I     ,3
920420,JONESBORO          ,GA,US,01,GR,FC,  , 75.00, 75.00,
,CIW   ,4
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,CIW   ,5
920506,NEW SAREPTA        ,AL,CA,01,OA,HO,  ,  6.00,  6.00,
,K     ,6
920512,JEFFERSON COUNTY   ,TN,US,01,GR,FC,  , 14.75, 14.75,
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,IW    ,8
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,IW    ,9
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,IW    ,10
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,IW    ,11
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,GIS   ,15
920525,LIMERICK           ,PA,US,04,WH,FC,  ,  1.54,  1.54,
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,GIS   ,18
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920600,                   ,MA,US,01,GR,OT,  ,      ,      ,
,EW    ,25
920600,TROY               ,IL,US,01,GR,FR,  , 12.30, 12.30,
5.38,ISTU  ,26
920600,TROY               ,IL,US,01,WH,FC,  ,      ,      ,
,I     ,27
920600,TROY               ,IL,US,02,WH,FC,  ,      ,      ,
,I     ,28
920600,TROY               ,IL,US,03,WH,FC,  ,      ,      ,
,I     ,29
920600,EFFINGHAM          ,IL,US,01,GR,FC,  ,      ,      ,
,IC    ,30
920600,EFFINGHAM          ,IL,US,02,GR,FC,  ,      ,      ,
,IC    ,31
920600,EFFINGHAM          ,IL,US,03,GR,FC,  ,      ,      ,
,IC    ,32
920612,EAST KNOX COUNTY   ,TN,US,01,WH,FC,  ,      ,      ,
,IW    ,33
920612,EAST KNOX COUNTY   ,TN,US,02,WH,FC,  ,      ,      ,
,IW    ,34
920612,EAST KNOX COUNTY   ,TN,US,03,WH,FC,  ,      ,      ,
,IW    ,35
920612,EAST KNOX COUNTY   ,TN,US,04,WH,FC,  ,      ,      ,
,IW    ,36
920612,EAST KNOX COUNTY   ,TN,US,05,WH,FC,  ,      ,      ,
,IW    ,37
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920612,EAST KNOX COUNTY   ,TN,US,06,WH,FC,  ,      ,      ,
,IW    ,38
920627,RAEFORD            ,NC,US,01,GR,FR,  ,  4.60,  4.60,
1.85,DMU   ,39
920700,MINIOTA            ,MB,CA,01,OA,FC,CW,  9.80,  9.80,
,M     ,40
920700,PILOT PEAK         ,CA,US,01,GR,FC,  ,      ,      ,
,AEIU  ,41
920700,PILOT PEAK         ,CA,US,02,GR,FC,  ,      ,      ,
,AEIU  ,42
920701,ST.ADOLPHE         ,MB,CA,01,GR,OT,  , 12.00, 18.00,
,EW    ,43
920701,ST.ADOLPHE         ,MB,CA,02,GR,OT,  , 12.00, 18.00,
,EW    ,44
920701,ST.ADOLPHE         ,MB,CA,03,GR,OT,  , 12.00, 18.00,
,EW    ,45
920701,ST.ADOLPHE         ,MB,CA,04,GR,OT,  , 12.00, 18.00,
,EW    ,46
920701,ST.ADOLPHE         ,MB,CA,05,GR,OT,  , 12.00, 18.00,
,EW    ,47
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,EW    ,48
920701,ST.ADOLPHE         ,MB,CA,07,GR,OT,  , 12.00, 18.00,
,EW    ,49
920701,ST.ADOLPHE         ,MB,CA,08,GR,OT,  , 12.00, 18.00,
,EW    ,50
920701,ST.ADOLPHE         ,MB,CA,09,GR,OT,  , 12.00, 18.00,
,EW    ,51
920705,FERGUS FALLS       ,MN,US,01,AL,FC,  ,  4.60,  4.60,
,CI    ,52
920705,FERGUS FALLS       ,MN,US,02,AL,FC,  ,  4.60,  4.60,
,CI    ,53
920705,HOBBEMA            ,AL,CA,01,BY,FC,  , 14.30, 10.60,
,EM    ,54
920705,HOBBEMA            ,AL,CA,02,BY,FC,  ,      ,      ,
,EM    ,55
920715,ST.ADOLPHE         ,MB,CA,01,WH,OT,  ,      ,      ,
,EW    ,56
920721,FRIEDENSRUH        ,MB,CA,01,GR,OT,  , 10.00,  5.25,
,AEK   ,57
920800,CHAMPAGNE          ,IL,US,01,  ,  ,  ,      ,      ,
,I     ,58
920801,STRATHCLAIR        ,MB,CA,01,WH,FC,CC,  8.60,  8.60,
,S     ,59
920808,STRATHCLAIR        ,MB,CA,01,WH,FC,CC,  8.60,  8.60,
,CGS   ,60
920815,IPSWICH            ,MB,CA,01,WH,FC,CC,  8.00,  7.50,
,CGS   ,61
920815,STRATHCLAIR        ,MB,CA,01,WH,FC,  ,  6.10,  6.10,
,EW    ,62
920815,STRATHCLAIR        ,MB,CA,01,WH,FC,CC,  7.40,  7.40,
,CGS   ,63
920815,KYLE               ,SK,CA,01,WH,FR,  ,  3.70,  3.70,
1.30,M     ,64
920817,BRANDON            ,MB,CA,01,GR,FC,  ,  6.00,  6.00,
,E     ,65
920825,GUY                ,AL,CA,01,WH,FR,CC,  4.00,  4.00, 0.50,
,66
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920825,GUY                ,AL,CA,02,WH,FR,CC,  4.00,  4.00, 0.50,
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,69
920825,GUY                ,AL,CA,05,WH,FR,CC,  3.00,  3.00, 0.50,
,70
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,79
920825,GUY                ,AL,CA,15,WH,FR,CC,  3.00,  3.00, 0.50,
,80
920820,MILESTONE          ,SK,CA,01,WH,FR,CC, 19.40,  6.80,
,DIK   ,81
920830,AUSTINBURG         ,OH,US,01,CN,OT,  ,  7.70,  2.50,
,ST    ,82
920908,CLARK              ,SD,US,01,PO,VD,  ,185.00,185.00,
,MS    ,83
920923,ALBERTVILLE        ,SK,CA,01,OA,FR,CC, 10.77, 10.77,
0.50,GI    ,84
920923,MELITA             ,MB,CA,01,WH,FC,CC,  5.23,  5.23,     ,
,85
920923,MELITA             ,MB,CA,02,WH,FC,CC,  2.50,  2.50,
,C     ,86
920924,ALBERTVILLE        ,SK,CA,01,WH,FR,CC,  6.77,  6.77,
0.20,GI    ,87
920927,PITTSVILLE         ,MO,US,01,GR,YG,  ,  3.00,  3.00,
,GKT   ,88
920930,ORILLIA            ,ON,CA,01,CN,FC,CC, 30.00, 23.00,     ,
,89
921002,NIPAWIN            ,SK,CA,01,WH,FC,CC,  2.46,  2.46,     ,
,90
921002,NIPAWIN            ,SK,CA,02,WH,FC,CC,  2.46,  2.46,     ,
,91
921002,NIPAWIN            ,SK,CA,03,WH,FC,CC,  2.46,  2.46,     ,
,92
921115,MILESTONE          ,SK,CA,01,WH,FR,  ,      ,      ,
,GD    ,93

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1992 North American UGMs, Annotated Case Listing

920320 Dundee, Ohio
- a "scorched-looking" circle, 27x30 feet in two diameters and with a "jagged" edge, was found in a pasture 1500 feet from a farmhouse. The soil was not burned, however, and was found to contain "black particulate matter" of some kind.
Source: Ted Spickler, MUFON

9204?? , New Hampshire
- UGMs were found following a small local flap of UFO reports.
Source: Rosemary Ellen Guiley; Vance Tiede

9204?? , Iowa
- A number of "ice circles" were reported.
Source: Vance Tiede?

920426 Jonesboro, Georgia
- two large areas of flattened grass were discovered in about the same location that others were found in 1991. One area was the size of a football field. Weather damage was suspected.
Source: Rosemary Ellen Guiley, CNACCS

920506 New Sarepta, Alberta
- a "space cookie" UGM was discovered in a meadow. It is a perfect circle, 6 metres in diameter. Its depth varies from 5 cm to 31 cm. Grass is growing straight up both inside and outside the circle. No tracks were found leading to the area. The UGM is not a sinkhole.
Source: Gordon Kijek, AUFOSG

920512 Jefferson County, Tennessee
- several indentations were found in a grassy field. Some were swirled circles, others "bars" and others irregular. Probable lodging.
Source: Rosemary Ellen Guiley, CNACCS; MUFON

920517 Chino Valley, Arizona
- three patches of flattened alfalfa were found. Probable weather damage.
Source: Rosemary Ellen Guiley, CNACCS

920525 Limerick, Pennsylvania
- at least 12 "matted down" areas were found in a wheatfield north of Philadelphia. Three were circles about five feet in diameter, arranged in a triangle. One feature was "T-shaped". Soil samples taken by a UFO

investigator "showed no irregularities". Geiger counter readings were also
normal. Although a hoax was suspected by the UFO investigator, the owner
of the field believes that the UGMs were caused by lodging, wind and
fertilizer damage, and that "It happens every year".
Source: Steve Bernheisel on FIDONET; UFO Newsclipping Service #275
Rosemary Ellen Guiley, CNACCS

9206?? , Massachusetts
- a small area of flattened cattails was found in a marsh close to a
freeway and reported as a crop circle.
Source: Tom Randolph on DEC COM via INTERNET

920600 Troy, Illinois
- a doughnut-shaped impression was found in sweet flag weeds. The circle
looked much like others that had appeared in the same field in 1991.
Samples from the circles were analyzed by Dr. Levengood and shown to have
abnormalities. A skeptic posted an admission of hoaxing on a computer
bulletin board, but this was never verified.
Source: Rosemary Ellen Guiley, CNACCS; NAICCR; INTERNET

920600 Troy, Illinois
- three circles were found in a wheat field.
Source: Rosemary Ellen Guiley, CNACCS

920600 Effingham, Illinois
- a pilot reported seeing three circles connected by bars in a field.
Source: Rosemary Ellen Guiley, CNACCS

920612 East Knox County, Tennessee
- numerous impressions were found in a wheat field. The areas were
irregular and showed signs of lodging.
Source: Rosemary Ellen Guiley, CNACCS; MUFON

920627 Raeford, North Carolina
- a circle of flattened grass was found in a hay field following a CE2 UFO
sighting. A loud noise, "like a freight train", was heard, and two
witnesses ran to look out their front door. A object "the size of a
swimming pool", "like orange windows all around it", was in a field about
300 feet away from their house. When they went to call other witnesses, the
object disappeared.
Source: Patrick Kirol on FIDONET

9207?? Miniota, Manitoba
- it was reported that a circle was found in an oat field. It was perfectly round and 32 feet in diameter. The oats were flattened and swirled clockwise. The center of the circle is devoid of vegetation.
Source: NAICCR

9207?? Pilot Peak, California
- according to the Phoenix Project, "landing zones" were discovered near the site of an alleged underground UFO base. Visits to the site by independent investigators found only patches of grass trampled by deer.
Source: John Pickens on INTERNET via PARANET

920701 St. Adolphe, Manitoba
- nine "horseshoe-shaped" patches of flattened grass were found on either side of a brook in a Winnipeg suburb. Because of recent storms and heavy rainfall, lodging was thought to be the cause.
Source: Guy Westcott; NAICCR

920705 Fergus Falls, Minnesota
- a "dumbbell" formation was discovered in alfalfa. Two 15-foot circles were connected by a 25-foot shaft.
Source: Rosemary Ellen Guiley, CNACCS; William McNeff, Minnesota MUFON

920705 Hobbema, Alberta
- two ovals of flattened barley were found in a field after unusual lights were observed descending to the ground. The largest UGM has a major axis of 47 feet. The crop is pushed away uniformly from the centers of the patches, but the centers are "clumped", like breaking waves. Barley inside the circles is "white", and devoid of colour. It was later suggested that the areas were due to spilled seeds and fertilizer, combined with lodging.
Source: Gord Kijek, AUFOSG

920715 St. Adolphe, Manitoba
- a field beside a highway was discovered to have numerous patches of flattened crop, in irregular patterns. The formations were discovered by the same person who found case 920701. Investigation by NAICCR and interviews with the owner of the field established that the crop had been

laid down by strong winds and heavy rain. The person who discovered the formations was convinced that aliens created the flattened patches.
Source: NAICCR

920721 Friedensruh, Manitoba
- a farmer found a triangular area of flattened/swirled grass which was surrounded by an electric fence. The dimensions were 31x27x17 feet. Local residents could not explain the phenomenon. However, NAICCR investigators found evidence that animals had trampled the site.
Source: NAICCR

9208?? Champagne, Illinois
- crop formations were found?
Source: MUFON

920801 Strathclair, Manitoba
- a circle of flattened wheat was discovered in a field southwest of Strathclair. It was 28 feet in diameter. The wheat was flattened and swirled in a counterclockwise fashion.
Source: NAICCR

920808 Strathclair, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars (a circle with an attached arrow pointing away from it) was discovered in a field southwest of Strathclair. The main circle was 28 feet in diameter, with no detectable eccentricity. The wheat was flattened counterclockwise. In the arrow, the wheat was flattened away from the circle. The arrow pointed on a bearing of 260 degrees.
Source: NAICCR

920815 Ipswich, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars was discovered just east of Ipswich. The main circle was elliptical, with axes 26 and 24.5 feet. The wheat was flattened counterclockwise. The arrow pointed on a bearing of 65 degrees. A UFO was seen hovering over the site the night before the UGM was discovered.
Source: NAICCR

920815 Strathclair, Manitoba
- a flattened area of wheat was found near other crop circle UGMs. It was

roughly 20 feet in diameter. Wheat was laid down in random clumps.
Examination suggested the area was caused by lodging.
Source: NAICCR

920815 Strathclair, Manitoba
- a flattened area of wheat in the shape of the symbol for Mars was
discovered west of Strathclair. The main circle was 24 feet in diameter.
The wheat was flattened in a counterclockwise fashion. The arrow pointed
on a bearing of 120 degrees.
Source: NAICCR

920815 Kyle, Saskatchewan
- a flattened ring was found, 12 feet in diameter with a core of standing
wheat, 3.5 feet in diameter. In the center were "porcupine droppings".
Source: Chad Deetken

920817 Brandon, Manitoba
- a television station received an anonymous call that a crop circle had
been found on the property of the Brandon airport. Explained easily as a
parachuting target.
Source: CKX-TV; Jeff Harland; NAICCR

920825 Guy, Alberta

- fifteen circular marks were found in a field near Peace River, Alberta.
Investigated by Gord Kijek of AUFOSG.
Source: AUFOSG

920820 Milestone, Saskatchewan
- a triplet of crop circles, touching each other in a line, were
discovered in a wheat field. The dimensions of the affected area were
63x22 feet. All were swirled counterclockwise. A "squashed porcupine" was
found inside the formation. Investigated by Chad Deetken.

920830 Austinburg, Ohio
- a rectangular impression was found in sweet corn. It measured 25x8 feet,
and stalks had been "bent, not broken". No footprints or evidence of wind
damage were found. Tests by Dr. Levengood found that tassels on plants
from inside the impression were different from control samples.
Source: Rosemary Ellen Guiley, CNACCS

920908 Clark, South Dakota
- a "perfect" 600-foot circle of dying potato plants was found.
Source: Linda Howe; MUFON, Rosemary Ellen Guiley, CNACCS

920923 Albertville, Saskatchewan
- a circle with a ring was discovered in an oat field. The ring was 35
feet in diameter, and the circle was about 16 feet in diameter. It was
swirled counterclockwise, but the center of the swirl was off-center. The
ring had a varying width of 15 to 27 inches.
Source: Chad Deetken

920923 Melita, Manitoba
- two circles were found in a wheat field, only a few feet apart and
connected by a corridor.
Reported to NAICCR and investigated by Jeff Harland.

920924 Albertville, Saskatchewan
- a second circle with a ring was discovered in a wheatfield. Ring
diameter: 22 feet; circle: 13 feet. Ring width: 8 inches. All were
swirled counterclockwise.
Source: Chad Deetken

920927 Pittsville, Missouri
- a "C-shape" and two rectangles were found in a pasture. Dogs barked
constantly the night before. The grass was discoloured and parts were
"overgreen".
Source: Rosemary Ellen Guiley, CNACCS

920930 Orillia, Ontario
- one large oval patch of flattened corn was found in a field near
Orillia. The area was 75 by 100 feet, on the south slope of a south-facing
hill, only about 100 feet from a major highway. The corn was flattened and
swirled in a counterclockwise direction. Reported to NAICCR.
Source: Colin McKim.

921002 Nipawin, Saskatchewan
- three circles were found in a wheatfield, spaced irregularly. All had
diameters of about 8 feet and were swirled counterclockwise.
Source: Chad Deetken

921115 Milestone, Saskatchewan
- a "half-moon" of flattened wheat was found appended to the original site
of 920820.
Source: Chad Deetken
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Lemme know if there are some corrections to make. If not I will be
sending it out all over this week.

Snorg you soon,
----- dAvid tHacker ----- | Box 2817, Olds, Alberta CANADA T0M 1P0
Communications Coordinator | Phone: (403) 556-1108 Fax: (403) 556-6468
Alberta UFO Study Group | Email 70744.3253@compuserve.com

--
Chris Rutkowski - rutkows@ccu.umanitoba.ca
Royal Astronomical Society of Canada
University of Manitoba - Winnipeg, Canada

To: All Message #: 3268
From: ncar!ccu.UManitoba.CA!rut Submitted: 22 Jul 92 12:56:00
Subject: North American UGMs in 19 Status: Public
Received: No Group: INFO.PARANET (1)

RE: North American UGMs in 1992
From: ncar!ccu.UManitoba.CA!rutkows@scicom.AlphaCDC.COM
Date: 21 Jul 92 20:49:16 GMT
Message-ID: <24787@scicom.AlphaCDC.COM>
Newsgroups: info.paranet

From: Chris Rutkowski <rutkows@ccu.UManitoba.CA>

For those who are interested, the following is the latest information
from NAICCR.

1992 North American Crop Circles and/or UGMs
Reported to NAICCR as of 21 July 1992

920426 Jonesboro, Georgia
- a 'formation' of crop circles, 'exactly' like those found in 1991 in the same location, was discovered.
Source: Rosemary Ellen Guiley; Vance Tiede

9204?? , New Hampshire
- UGMs were found following a small local flap of UFO reports.
Source: Rosemary Ellen Guiley; Vance Tiede

920506 near Edmonton, Alberta
- a 'space cookie' UGM was discovered in a meadow. It is a perfect circle, 6 metres in diameter. Its depth varies from 5 cm to 31 cm. Grass is growing straight up both inside and outside the circle. No tracks were found leading to the area. The UGM

is not a sinkhole.
Source: Gordon Kijek

9205?? Philadelphia, Pennsylvania
- two crop circles were found in a cornfield just north of the Philadelphia city limits. Soil samples taken by a UFO investigator 'showed no irregularities'.
Source: Steve Bernheisel on FIDONET

920627 Raeford, North Carolina
- a circle of flattened grass was found in a hay field following a CE2 UFO sighting. A loud noise, 'like a freight train', was heard, and two witnesses ran to look out their front door. A object 'the size of a swimming pool', 'like orange windows all around it', was in a field about 300 feet away from their house. When they went to call other witnesses, the object disappeared.
Source: Patrick Kirol on FIDONET

9206?? , Massachusetts
- a small area of flattened cattails was found in a marsh close to a major highway and reported as a crop circle.
Source: Tom Randolph on DEC COM via INTERNET

920701 St. Adolphe, Manitoba
- nine 'horseshoe-shaped' patches of flattened grass were found on either side of a brook in a Winnipeg suburb. Because of recent storms and heavy rainfall, lodging was thought to be the cause.
Source: Guy Westcott; NAICCR

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- two ovals of flattened barley were found in a field after unusual lights were observed descending to the ground. The largest UGM has a major axis of 47 feet. The crop is pushed away uniformly from the centers of the patches, but the centers are 'clumped', like breaking waves. Barley inside the circles is 'white', and devoid of colour. It was later suggested that the areas
were due to spilled seeds and fertilizer, combined with lodging.
Source: Gord Kijek

920715 St. Adolphe, Manitoba
- a field beside a highway was discovered to have numerous patches of
flattened crop, in irregular patterns. The formations were discovered
by the same person who found case 920701. Investigation by NAICCR and
interviews with the owner of the field established that the crop had
been laid down by strong winds and heavy rain. The person who discovered the formations was convinced that aliens created the flattened patches.
Source: NAICCR

--
Chris Rutkowski - rutkows@ccu.umanitoba.ca
Royal Astronomical Society of Canada
University of Manitoba - Winnipeg, Canada

--- ConfMail V4.00
 * Origin: Paranet(sm) - The world's leading UFO Investigative News Network (1:30163/150)
=-=-=-=-=
(655)   Tue 14 Apr 92 0:13
By: Don Allen
To: All
Re: CC conspiracy?

@EID:116b 01d048cc
@MSGID: 1:363/29 350051e6

Subject: Crop Circle Conspiracy Revealed
---
cc: BAMA
CONTACT
FIDO UFO
MUFONET
PARANET

Dan Smith has asked me to pass this information along to the various networks.

In an article appearing last week in the prestigious Quarterly Journal of the Cosmos Club of Washington, DC., archeo-astronomer Gerrald S. Hawkins, has written that the coding scheme based on geometry and music theory that he has discovered in connection with the "Crop Circles" appearing in the fields of England, "can be interpreted as giving the initials of the past presidents of a famous London Society." An article about Hawkins' investigation in the February 1 issue of Science News generated more reader response than any previous article in that magazine.

Rosemary Ellen Guiley, Director of the Center for North American Crop Circle Studies, who has followed Hawkins' work closely, informs me that the Society in question is almost certainly the British Society for Psychical Research, founded in 1882. For further information contact Ms. Guiley at the Center, P.O. Box 1712, New Canaan, CT 06840-1712. (tel. 203-972-7293 or fax 203-972-7387).

I (D.S.) believe that Prof. Hawkins' work casts serious doubt on the tabloid view that the alleged hoaxers are acting casually and independently. We are finding a sophisticated cabal of "hoaxers" (alive or dead!) attempting to delude significant segments of the population and doing so on a global scale. It might seem that "British humor" is turning to megalomania. We have a Pied Piper with a vengence. On the other hand, if this is a Cosmic communication, then the reference to the S.P.R. is strongly suggesting our

participation in whatever drama might be unfolding.

--- RemoteAccess 0.03+
 * Origin: PARANET//UFINET//BAMA//UFO_LINK (407)649-4136
(1:363/29)
@PATH: 363/29 268/102 104/422
Subject: Crop Circle Radionuclide Study (1/2)
Date: 20 Oct 1994 14:55:12 -0400

Title: "The Discovery of Thirteen Short-Lived Radionuclides in Soil Samples from an English Crop Circle"

Sub-title: "I wonder how a couplea inebriated elderly English pranksters coulda pulled this one off..."

If you have seen this article previously, please ignore it. Otherwise, you may wish to review it off-line as it is approximately 800 lines in length.

Disclaimer: This information is provided for informational purposes only and should definitely appeal to the "left-brainers" in the bunch. This ASCII version of the paper comes without photos. The authors may be contacted at North American Circle, Box 61144, Durham, North Carolina, 27715-1144, USA. Paper completed December 31, 1991.

[Part 1 of 2]

The Discovery of Thirteen Short-Lived Radionuclides in Soil Samples from an English Crop Circle

Marshall Dudley, Tennelec/Nucleus, Oak Ridge, Tennessee, USA
Michael Chorost, Duke University, Durham, North Carolina, USA

In this paper we report the discovery of thirteen short-lived radionuclides (radioactive isotopes) in soil samples taken from an English crop circle. We will explain the significance of this discovery, rule out several mundane explanations for it (including hoax), and propose that the radionuclides were created by bombardment of the soil with deuterium nuclei (also called "deuterons.") We will also consider whether the radionuclides present a health hazard and conclude that they probably do not.

A note on terminology: we shall use the terms "isotope", "radioactive isotope", and "radionuclide" more or less interchangeably. Not all

isotopes are radioactive, of course, but the ones we are discussing are. The term "radionuclide" simply means an atom whose nucleus is unstable and thus radioactive.

I. The Experimental Results

The oval-shaped crop circle (Photo 1) was formed the night of July 31/August 1, 1991, near the town of Beckhampton. 1 On August 5th, we gathered two soil samples inside it and took a control several dozen feet away. Their emissions of alpha and beta particles were measured with a Tennelec/Nucleus LB4000-8 gas flow counter on August 18th. Their emissions proved to be markedly elevated, compared to the control. One sample (1A) yielded alpha emissions 198% above the control, and beta emissions 48% above the control. The other sample (1B) yielded alpha emissions 45% above the control, and beta emissions 57% above the control. 2

We hypothesized that these anomalies were too large to ascribe to normal soil variation. This was supported by the fact that two controls from another formation in the area (formed August 9/10, SU 076 679) yielded alpha and beta counts within 2% and 4% of each other. By contrast, the two samples from within the formation yielded alpha and beta counts 22% to 45% higher than the averaged controls. In light of our subsequent discovery of short-lived radionuclides in the Beckhampton oval, we think it reasonable to believe that the samples' emissions were not due to normal soil variation.

Our next step was to identify the specific radioactive isotopes responsible for the elevated emissions. Thus we sent the samples to another lab for gamma spectroscopy, which was performed on August 26th. Analysis of the output revealed the presence of thirteen unusual and short-lived radionuclides in the samples. Two were found in all three samples.

Eleven were in either 1A or 1B but not in the control. We list these eleven radionuclides in Table 1.

(An explanatory note: the number following each isotope's name indicates its atomic weight, i.e. the combined number of protons and neutrons in the nucleus. It is necessary to specify the atomic weight to distinguish different isotopes of the same element from each other. For example, uranium-235 and uranium-238 are different isotopes of uranium, and have different nuclear properties, though they remain chemically identical. Most elements have many isotopes, some of which are common and long-lived, some of which are rare and short-lived. The ones listed in Table 1 fall in the latter category.)

Table 1. Radionuclides in Samples 1A and 1B But Not In The Control

Radionuclide	Abbrev.	Present in 1A	Present in 1B	Half-life
Lead-203	Pb-203	Probably*	No	12.17 days
Europium-146	Eu-146	Yes	No	4.6 days
Tellurium-119m	Te-119m	Yes	No	4.7 days
Iodine-126	I-126	Yes	No	13.02 days
Bismuth-205	Bi-205	Yes	No	15.31 days
Vanadium-48	V-48	Probably	No	16.1 days
Protactinium-230	Pa-230	Yes	Yes	17.4 days
Ytterbium-169	Yb-169	Yes	No	32 days
Yttrium-88	Y-88	Yes	Probably	106.6 days
Rhodium-102, Rhodium-102m	Rh-102, Rh-102m**	Yes Probably	No No	2.9 years 207 days

* "Probably" indicates identification somewhat short of certainty, due to low activity.

** "m" means "metastable." Rh-102m has the same number of protons and neutrons as Rh-102, but its nucleus has a different physical

configuration. The two isotopes have different half-lives but, for our practical purposes, the same ancestors and decay products. We thus treat them as a single isotope.

It is of crucial importance that none of the radionuclides in Table 1 appeared to be in the control, since it helps rule out many mundane explanations. The control did have long-lived, naturally occurring radionuclides such as uranium-238 and radium-226, and long-lived artificial radionuclides from Chernobyl such as cesium-137. But all three samples contained these radionuclides, unsurprisingly.

But the presence of the short-lived radionuclides is surprising. To understand why, the reader should consider their half-lives (see Table 1.) "Half-life" refers to the amount of time it takes for half of a given amount of an element to decay into some other substance. For example, it would take 17.4 days for half of a given amount of protactinium-230 to decay. After twice that time, only 25% of the original amount would be left, and so on. Therefore, any amount of protactinium-230 will diminish to undetectable levels in a matter of weeks. By contrast, naturally occurring uranium-238 has a half-life of over four and a half billion years. It thus can be naturally occurring whereas Pa-230 cannot be. Should scientists want to study short-lived isotopes, they must synthesize them in cyclotrons or experimental nuclear reactors; they can't just refine them from soil or ores. Finding them in apparently ordinary soil from rural England is almost as surprising as finding cut diamonds would be. It is radically out of line with normal expectations.

Before going on with our discussion, we want to reassure readers

that the presence of the short-lived isotopes does not appear to present any health threat. Even though the samples emitted higher percentages of radiation than the control, their total emissions were far below the danger threshold. This is because the radionuclides were present in such low concentrations that they could only be detected by exquisitely sensitive equipment. The absolute quantities of the radionuclides were so low that one would probably be exposed to more radioactivity by eating a banana (which contains the natural radionuclide potassium-40) than by spending 24 hours in a fairly new crop circle.

Readers should also consider the fact that none of the leading researchers of the phenomenon have contracted cancer or other radiation-induced illnesses, despite having spent many hundreds of hours in crop circles over a decade of study. Not only that, it is far from clear that radiation anomalies are a general property of crop circles. Of the six we examined for elevated alpha/beta emissions, only two exhibited significant increases. Two others exhibited apparently significantly lower emissions, and the last two exhibited no significant differences. 3 Research in 1992 could reveal that only a certain percentage of apparently genuine crop circles exhibit radiation anomalies at all. This would further reduce cause for concern.

To return to our discussion, where could the radionuclides have come from? Let us first consider (and reject) eight mundane explanations. Actually, the absence of the radionuclides in the controls automatically rules out most of these explanations, but for thoroughness's sake, we will consider them anyway.

1. We have already established that they cannot be naturally occur-

ring radionuclides, due to their short half-lives.

2. Contamination from the sample vials is unlikely. We used washed-out plastic pharmaceutical jars. These could have caused some small degree of chemical contamination, but not radioactive contamination.

3. Technologically unsophisticated hoaxers are out of the question, since no amount of foot-stomping will form radioactive isotopes in soil. It is not energetic enough by many orders of magnitude; it would be like trying to compress coal into diamonds by jumping on it.

4. Atomic tests and Chernobyl are untenable as sources, since these events happened years, not days, ago. But to be absolutely sure, we checked Table 1 against inventories of the emissions from Chernobyl, atomic bomb tests, and nuclear installations. None of the radionuclides in Table 1 were found in any of the inventories. Furthermore, we compared Table 1 to the decay products of each radionuclide in the inventories, and found no matches. We therefore feel reasonably confident that human-made radionuclides are not responsible for the anomalies. 4

5. Likewise, we have ruled out radionuclides which are the products of bombardment by cosmic rays. We checked an inventory of cosmogenic radionuclides, and none of them were or could have decayed into anything in Table 1. 5

6. Since the soil samples traveled by air, we felt it necessary to consider the effect of airport bomb detectors. The sample set under dis-cussion was airmailed. The other (the one with two controls) was packed in a carry-on bag. But we can rule out bomb detectors simply because any detector would have affected the controls as well. In any case, airmail is not screened, and X-ray machines are not energetic enough to create those isotopes. They can't even fog ordinary film.

7. What about thermal neutron activators? These are experimen-

tal devices being tested in several English airports. They bombard checked luggage with neutrons from californium-252 in order to activate and detect the nitrogen in plastic explosives. But many of the radionuclides, such as Y-88, Bi-205, and V-48, cannot be made by neutron activation. Thus even a TNA device could not have made all of the radionuclides, even if by some miracle the samples had gone through one. 6

8. We believe we can rule out deliberate "planting" of radionuclides in crop circles by determined hoaxers using hospital low-level radioactive waste. First, hospital waste simply does not consist of such radionuclides. Hospitals typically use extremely short-lived isotopes like technetium-99m (half-life: six hours) to minimize their patients' exposure to radiation. They are generated from somewhat longer-lived long-lived radionuclides like molybdenum-99, which has a half-life of 2.9 days. (Hospitals typically receive lead-encased shipments of molybdenum-99 three times a week.) In hospital parlance, the longer-lived isotopes function as "cows" producing short-lived radionuclides which are "milked" when needed. Hospital "cows" include none of, and produce none of, the radionuclides in Table 1. 7 Second, we think it unlikely that hoaxers would have been able to pour or spray any contaminated solution over the many thousands of square feet inside a large crop circle. Third, most of Table 1's radionuclides are very difficult and expensive to obtain. One must usually get a license from the government to buy them, which takes months, then commission a cyclotron to manufacture them, which costs a great deal of money. Fourth and finally, any such heroic effort for any given formation would almost certainly be wasted, since only a handful have been tested for radiation.

Thus we have ruled out natural radionuclides, cosmogenic radio-
nuclides, sample jar contamination, atmospheric nuclear tests, Chernobyl,
airport X-ray detectors, TNA detectors, and contamination with hospital
waste by hoaxers. We must now consider some less mundane possibilities.

II. The Origin of the Radionuclides

Broadly speaking, there are two ways the radionuclides could have
got into the ground. One way is contamination, which would consist of
pouring or spraying a solution or dust containing the radionuclides onto
the ground. We think contamination unlikely for the same reasons a hoax
is unlikely: the difficulty of making the radionuclides prior to placing
them
in the area, and the almost equal difficulty of applying the contaminated
material over a large but sharply delimited area.

The other way is activation. Activation is the process of bombard-
ing atomic nuclei with energetic subatomic particles. The nuclei capture
the particles and are thus transformed into different nuclei. If the
number
of neutrons in the nuclei change, they become different isotopes of the
same element. If the number of protons change, they become different
elements altogether. For example, it is theoretically possible to change
lead
into gold by activating it with the right mixture of particles. The only
obstacle, aside from its difficulty, is the fact that it would cost more
than an
ounce of gold to produce an ounce of gold.

There are many different kinds of activation: activation by alpha
particles, activation by protons, activation by deuterons, and so on.
Each
kind will have different effects on a given atomic nucleus. But despite
this
complexity, activation enables us to produce an elegant hypothesis about

what happened to the soil. We have discovered that the radionuclides in Table 1 have one and only one common denominator, and that is activation of naturally occurring elements with deuterium nuclei (deuterons.) In a moment we shall undertake to prove this, but first it may be helpful to explain just what deuterium nuclei are and what they can do.

Deuterium is an isotope of hydrogen. Its nucleus is composed of a proton and a neutron. (The rest of the atom consists of an electron, which is easily stripped off to leave the ionized, bare nucleus.) Since ordinary hydrogen's nucleus contains only a proton, deuterium's extra neutron entitles it to be called "heavy hydrogen." Deuterium is not a particularly rare isotope, since it exists in small quantities in ordinary water. It is a useful one, however, since it is used to control neutron emissions in fission reactors, and constitutes much of the fuel in fusion reactors. Of course, knowing these basic facts still tells us nothing about where these deuterium nuclei (we shall henceforth use the term "deuterons") came from. They could have come from any number of sources, including ones not yet known. At the moment, we think it more useful simply to assert that they existed than to speculate about their origin.

In any case, the deuterons we hypothesize are remarkable not because they are rare, for they are not, but because they are highly energetic. Most deuterium particles found in nature are relatively unenergetic, such as the ones in ordinary water. An unenergetic, that is, a slow-moving, deuteron cannot penetrate and alter atomic nuclei, just as a bullet casually tossed at a television set will not penetrate it. An energetic deuteron

is a different story. A deuteron accelerated to high speeds can penetrate an atomic nucleus and "activate" it, i.e. convert it into a different isotope or even a different element. Like a bullet fired from a gun, it can radically alter the objects it strikes. But the energies would have to be large. We think that to activate atomic nuclei, deuterons would have to possess energies exceeding one mega-electron-volt (MeV). That means, roughly speaking, that each deuteron would have to be accelerated by an electrical field possessing a total potential of not less than one million volts, which is a considerable amount of energy.

In this paper, we make no real attempt to figure out what could have generated energies of that scale, nor do we analyze whether such energies could arise naturally on planetary surfaces. For the moment, our goal is only to convince readers that the energies existed. To do that, we need to show that deuteron activation is indeed the most plausible route of production of the radionuclides in Table 1. For if deuterons that energetic existed, then so did the energies. We will do this by accounting for each radionuclide in terms of deuteron activation. The following discussion will be fairly long and technical, but we think it necessary to defend our thesis in some detail, since it is so unusual and surprising. The nontechnical reader can skim the discussion without trying to understand all of its de-tails; the important thing to understand is that we are showing that all the radionuclides very likely came from a common source. To put it another way, we are showing that there is considerable internal consistency to the data. If we can do this, it will help prove that we have discovered some-

thing significant about the actual physical mechanism which created this particular crop circle. To be specific, it appears to have emitted quantities of deuterons, which converted stable isotopes in the soil into unstable, radioactive ones.

We shall forthwith account for each radionuclide in terms of deuteron activation. Let us start with the easiest four to explain, protactinium-230, iodine-126, rhodium-102, and rhodium-102m. These four radionuclides have one thing in common: they can only be made by activation. (To say the same thing another way, none are ever generated by radioactive decay.) What atoms could have been activated to make them, then? There are several possibilities for each radionuclide (see Table 2.) The nontechnical reader should not be intimidated by this table. It simply lists each radionuclide in the first column, and each of its possible atomic parents in the second column, along with what would have had to activate them in parentheses. For example, protactinium-230 can be formed by three different activation reactions: a proton impacting a thorium-232 nucleus, a deuteron impacting a thorium-232 nucleus, or a deuteron impacting a thorium-230 nucleus. 8

Table 2. Radionuclides Which Are Not Decay Products, And Possible Activation Parents For Them

Radionuclide	Possible Activation Parents (activating particle in parentheses)
Pa-230	Th-232(proton), Th-232(deuteron), Th-230(deuteron)
Rh-102, Rh-102m	Ru-101(deuteron), Ru-102(proton), Ru-102(deuteron), Pd-104(deuteron), Rh-103(neutron), Rh-103(deuteron), Rh-103(gamma)
I-126	Sb-123(alpha), Te-125(deuteron), Te-126(deuteron), I-127(gamma), I-127(neutron)

Note that all four radionuclides have one, and only one, common denominator: deuteron activation. While this does not rule out the other kinds of activation, it does allow the hypothesis that only one kind was involved. Let us therefore focus on the parents which can be deuteron-activated. Table 3 is Table 2 with the non-deuteron-activated parents left out. It also asks an important question: are the remaining possible parents naturally occurring? In fact all of them are, which significantly enhances our hypothesis.

Table 3. Hypothesized Activation Parents Of Pa-230, Rh-102, Rh-102m, and I-126, Assuming Deuteron Activation

Radionuclide	Hypothesized Activation Parents	Naturally Occurring? (% of All Naturally Occurring Element)
Pa-230	Th-232	Yes (100%)
	Th-230	Yes (decay product of U-234; extremely rare)
Rh-102, Rh-102m	Ru-101	Yes (17.1%)
	Ru-102	Yes (31.6%)
	Pd-104	Yes (11.0%)
	Rh-103	Yes (100.0%)
I-126	Te-125	Yes (7.0%)
	Te-126	Yes (18.7%)

The percentages denote how much of that element is constituted by that particular isotope. Most naturally elements are composed of more than one isotope of that element.

Now let us consider another two radionuclides from Table 1, yttrium-88 and europium-146. These are more complicated cases because they could have been made by decay or activation. Let us first consider the possibility of decay. Yttrium-88 has one decay parent, zirconium-88. Zirconium-88 has a half-life of 83.4 days, which means that some of it should have been left in the sample if it was the source of the yttrium-88.

However, the gamma spectroscope detected no zirconium-88; we can thus rule out decay. Something must have been activated, then, and there is only one candidate: strontium-88 (82.6% of all naturally occurring stronti-um.) Strontium-88 can be made into yttrium-88 either by deuteron or proton activation. We infer the common denominator of deuteron activa-tion.

The europium-146 presents a case like yttrium-88's. One of its decay parents, gadolinum-146 (half-life: 4.6 days) was not found in the sample. Its other decay parent is terbium-150, but since only .05% of it decays into europium-146, a fairly large amount of this rare element would have had to be present in order to be converted into detectable quantities of Eu-146. Activation is again the more likely possibility. It turns out that europium-146 can be made by proton activation of samarium-147 (15.1% of all naturally occurring samarium), or by deuteron activation of samari-um-144 (3.1%.) 9 Our reasoning is summed up in Table 4:

Table 4. Radionuclides with Parents Not Present, And Activation Possibili-ties

Radio-nuclide	Decay Parents	Activation Parents	Deuteron-Activated Parents Naturally Occurring?
Y-88	Zr-88 (none)	Sr-88(proton) Sr-88(deuteron)	Yes (82.6%)
Eu-146	Gd-146 (none) Tb-150 (only 0.05% decays into Eu-146, hence unlikely)	Sm-147(proton) Sm-144(deuteron)	Yes (3.1%)

Let us move on to consider five more of Table 1's radionuclides, namely bismuth-205, vanadium-48, tellurium-119m, ytterbium-169, and lead-203. These have more than one possible decay parent. None of these possible decay parents were detected, however. There are two reasons for

this. One is that most of the decay parents have such short half-lives that they would not have been detectable by the time the samples were counted. The other is that there probably were never any of those decay ancestors in the sample to begin with, for all of the radionuclides can be much more easily accounted for by activation.

Consider the bismuth-205 first. It has two possible decay parents, astatine-209 (half-life: 5.41 hours) and polonium-205 (half-life: 1.8 hours.) Since 99.86% of polonium-205 decays into bismuth-205 whereas only 4.1% of astatine-209 does, the polonium is the more probable decay parent. But polonium-205 is still not a very probable parent, partly because it cannot be made by deuteron activation, and partly because its parents can only be made by activation methods which are far more exotic than the kinds we have been discussing. On the other hand, bismuth-205 can be made by deuteron activation of lead-206, which constitutes 25% of all naturally occurring lead. Thus deuteron bombardment of the soil almost certainly would have produced some bismuth-205.

Take the vanadium-48 next. Its only decay parent is chromium-48 (half-life: 21.56 hours), but it cannot be made by deuteron activation. On the other hand, vanadium-48 can be made by deuteron activation of titani-um-48 or chromium-50. The former constitutes 73.7% of all naturally occurring titanium, and the latter constitutes 4.35% of all naturally occur-ring chromium.

To keep this paper from growing too tedious, we will not discuss the tellurium-119m, the ytterbium-169, and the lead-203. However, our reasoning for them is similar to the two radionuclides just discussed above, and is summed up along with them in Table 5.

Table 5. Radionuclides with Short-Lived (And Not Present) Decay Parents,
And Activation Possibilities
(NPDA="not producible by deuteron activation")

Radio-nuclide Occurring?	Decay Parents	Activation Parents	Deuteron-Activated Parents Naturally
Bi-205	Po-205(NPDA) At-209(NPDA)	Pb-206(deuteron)	Yes (25%)
V-48	Cr-48(NPDA)	Ti-48(deuteron) Cr-50(deuteron) Sc-45(alpha) Ti-48(proton)	Yes (73.7%) Yes (4.35%)
Te-119m	I-119(NPDA)	Sb-121(deuteron) Sb-121(proton) Sn-116(alpha)	Yes (57.3%)
Yb-169	Lu-169(NPDA)	Tm-169(deuteron) Yb-168(neutron)	Yes (100%)
Pb-203	Bi-203(NPDA)	Tl-203(deuteron)	Yes (29.5%)

This concludes our discussion of the 11 radionuclides of Table 1.
We sum up our analysis in Table 6, which shows how we accounted for the
radionuclides as producible by deuteron activation of naturally occurring
stable elements in the soil.

Table 6. Summary. Most Likely Parents of the Radionuclides in Table 1
(Assuming Deuteron Activation)

Radio-nuclide Naturally	Present in Control?	Believed Activation Parent(s)	Are Activation Parent (s) Occurring?
Lead-203	No	Tl-203	Yes
Europium-146	No	Sm-144	Yes
Tellurium-119m	No	Sb-121	Yes
Iodine-126	No	Te-125, Te-126	Yes
Bismuth-205	No	Pb-206	Yes
Vanadium-48	No	Ti-48, Cr-50	Yes
Protactinium-230	No	Th-230, Th-232	Yes

Ytterbium-169	No	Tm-169	Yes
Yttrium-88	No	Sr-88	Yes
Rhodium-102, Rhodium-102m	No	Ru-101, Ru-102, Pd-104, Rh-103	Yes

Our analysis was not quite exhaustive. We cut through a maze of isotopic parents in the belief that the simplest solution was the most likely to be correct. We could be wrong: some of these radionuclides could theoretically be end-products of a cascade of decayings of extremely exotic and short-lived isotopes. Or proton activation could have produced some of the radionuclides while deuteron activation produced the others. But we think these possibilities unlikely. The former requires much greater complexity to arrive at the same result; the latter would probably have produced radionuclides which could only be made by proton activation, yet we have found none.

III. Loose Ends

No item of exploratory scientific research can answer all questions and settle all difficulties. Ours is no exception. Let us discuss what loose ends need to be cleared up with further research. (Nontechnical readers may wish to skip this section, since it is not central to our analysis.) The first loose end is the existence of two unusual radionuclides in all three samples, including the control. They are listed in Table 7.

Table 7. Radionuclides Present in 1A, 1B, And The Control

Radio-nuclide	Present in 1A?	Present in 1B?	Present in Control?	Half-life
Gold-194	Yes	Yes	Yes	1.65 days
Thallium-202	Yes	Yes	Yes	12.2 days

The gold-194 is puzzling, since it has such a short half-life--less than two days. Either enormous quantities of it were initially present

when the samples were collected, in which case the field would have been extremely radioactive, or something long-lived is continuously generating it by decay. The latter seems the likelier case. Gold-194 can be generated by the decay of mercury-194, which has a half-life of 520 years. The mercury-194 could have been created by a two-step activation process, whereupon the deuterons activated platinum-194 (32.9% of all natural platinum) to create gold-194, which was itself activated to make the mercury-194. The deuteron stream would have to last long enough, and be intense enough, to activate isotopes which had just been created by that same stream.

Assuming this is plausible, how do we explain the presence of the gold-194 in the control? Consider the fact that the mercury-194 has a half-life of 520 years. If the field had had crop circles in earlier years, the mercury-194 could have been spread around the field by wind, erosion, and plowing.

There are other possibilities, of course: the Chernobyl tables could be incomplete, or a nearby reactor might have emitted some mercury-194. Further research is needed to clear up the question.

Our analysis is similar for the other radionuclide, thallium-202. It does not appear to be a product of Chernobyl or atomic tests. Its only decay parent is lead-202, which has a half-life of 53,000 years. Lead-202 can be made by deuteron activation of thallium-203 (29.5% of all naturally occurring thallium.) Thus the thallium-202 could also be a remnant from earlier crop circles in the area, or an unlisted product of nuclear reactors.

The second loose end is why none of the hypothesized parents are abundant elements. If trace elements like titanium and samarium were

activated, it seems that abundant elements like silicon and oxygen should have been also. To answer this question, we took each element which composes more than 1% of the earth's crust and found its most likely deuteron-activation products. It turns out that they are either stable, in which case they would not have been detected by our instruments, or they have such short half-lives that they would have decayed off before testing, as Table 8 shows.

Table 8. Most Likely Deuteron Activation Products of Elements Which Compose More Than 1% Of The Earth's Crust

Element	Abundance in Crust	Most Likely Product	Product's Half-Life
Oxygen-16	46.6%	Flourine-17	1.075 minutes
Silicon-28	27.72%	Phosphorus-29	2.5 minutes
Aluminum-27	8.13%	Silicon-29	Stable
Iron-56	5%	Cobalt-58	9.15 hours
Calcium-40	3.63%	Scandium-42	1.027 minutes
Sodium-23	2.83%	Magnesium-25	Stable
Potassium-39	2.59%	Calcium-41	Stable*
Magnesium-24	2.09%	Aluminum-26	6.3 seconds

* Calcium-41 has a half-life of 1.03 x 10 to the 5th years. It is thus not truly stable. But it does not emit gamma rays, so it would not have been detected by our instruments.

The iron-56 deserves further scrutiny. Deuteron activation of iron-56 can also produce the radionuclides manganese-54 (half-life: 312 days) and cobalt-57 (half-life: 72 days.) But these would require levels of energy perhaps higher than required to generate most of the observed radionuclides. Our data did show peaks in the region of manganese-54, but not at sufficient resolution to permit positive identification. Clearly, in 1992 we will have to look carefully for activation products of the soil's abundant elements. Prompt testing will greatly facilitate the search.

Table 8 shows something else: the soil could well be dangerously radioactive for a short time after the formation is made. Since elements like silicon and oxygen (which exists as oxides bound up in the soil) are so abundant, their activation products would also be abundant. They would emit a large aggregate quantity of radiation, albeit for only a few minutes or hours. Out of simple prudence, then, fulltime researchers who enter a crop circle the morning after it is made should carry a sensitive survey meter (a Geiger counter is one kind of survey meter, though we would use other kinds) or an electrostatic film badge. Given the low amounts of radiation we think we are dealing with, these tools will have to be highly sensitive, and their users will have to be well trained; anything less would risk yield- ing nothing but false negatives. These instruments should reveal no cause for alarm, but if they do, we shall adopt more cautious sampling procedures.

Additional loose ends derive from the fact that the size of our sample set is too small to show that short-lived radionuclides are part and parcel of the crop circle phenomenon. However, we think our findings are so suggestive that further research is emphatically warranted. If one takes a single bucket of rock from a mine and finds gold in it, one is well justified in doing further digging.

We also need to take more controls in 1992. For this paper, two or three would have been better than one. Even so, the radionuclides are so unusual that finding them anywhere is cause for interest. The difference between our samples and single control is qualitative in an absolute, not a

statistical, sense. The case would warrant further investigation even without a control.

In addition, our interpretation of the data from the gamma spectrometer needs to be confirmed by similar findings from independent laboratories. Spectroscopic data is extremely complex, and its interpretation is inevitably a matter of judgment. But our interpretation of the data has convinced several of our associates in Oak Ridge. We believe it will stand; and we would be glad to show the raw data to those who wish to examine it for themselves.

IV. Where Might The Deuterons Have Come From?

So far, our hypothesis of a stream of deuterons suggests a possible physical concomitant of whatever flattens the plants, but it provides almost no clues as to the actual cause of the phenomenon. We can only speculate on several possibilities.

One possible cause is the naturally occurring "plasma vortex" hypothesized by some meteorologists. 10 The question is: is this hypothetical (and never experimentally detected) plasma vortex theoretically capable of generating the requisite number and density of deuterons? Obviously, this is a question requiring very detailed analysis, which we lack the expertise to perform. While we doubt that the lower atmosphere can naturally generate deuterons with energies sufficient to activate atomic nuclei, the possibility cannot be ignored.

If our research in 1992 demonstrates the presence of short-lived radionuclides in many crop circles, the meteorologists will have the burden of proving that their hypothesized plasma vortex can produce them. Also, since the radionuclides have appeared in at least one complex formation,

the meteorologists would have the additional burden of proving that their plasma vortices can produce such shapes. So far, they have proven neither assertion. In fact, they have given up on the latter one. For example, Terence Meaden has recently asserted, "It is obvious that most, perhaps all, complex sets of circles seen in Britain in recent years have been made by hoaxers." 11 Our data suggests otherwise.

The only other cause we can think of is a deliberately directed stream of deuterons. It would be worthwhile to calculate the energy required for such a stream, given the radionuclides observed, their concentration, and the size of the area in which they are found. The ballpark figures might help us evaluate theories of intentional manufacture.

However, hypothesizing a stream of deuterons still does not explain how the plants are actually flattened. The deuterons could not exert enough force to press the plants to the ground, for if they did, the plants would also be burned to a crisp. However, perhaps they heat the plants to some extent. Since it appears from W.C. Levengood's observations of plant cells that the plants are strongly but briefly heated, it might be possible to compare calculations of the heat experienced by the plants with the heat theoretically generated by the deuteron stream. 12 Perhaps the deuterons heat the plants just enough to make them pliable, while some other force bends them to the ground in the intricate patterns often observed. 13 Or perhaps the deuterons are not directly necessary to the flattening process at all, but are merely a concomitant of the overall physical process.

V. Conclusion

Our results point suggestively toward some radioactive source

which exposes the soil to a stream of energetic deuterium nuclei. To test this hypothesis, we hope to perform these same tests on multiple crop circles next summer. 1992's radiological research program should include the following aspects:

* Locating of financing for research, both from American and English sources
* Use of survey meters and film badges to test for health hazards and possibly to identify formations most deserving of detailed analysis
* Harvesting of multiple samples and controls from each crop circle
* Harvesting of samples across circle-less fields, to assess soil homogeneity
* Enlistment of U.K. labs with radiological equipment or, failing that, transportation of equipment from the U.S., or mailing samples overnight back to the U.S.
* Obtaining permits where needed for soil and plant importation
* Coordination with daily aerial surveillance, in order to sample crop circles promptly after they are made
* Regularization of sampling techniques
* Training, where needed, in the methods of analysis; and
* Improvement of the network for exchanging information.

The trail has grown hot, literally as well as figuratively. We must follow it wherever it may lead.

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Captions (Photo not included in file)

Photo 1. The "fish" or "long oval" formation near Beckhampton. According to John F. Langrish, it was formed on July 31/August 1, 1991, at SU 0865 6810. Photo courtesy of Jurgen Kronig.

Notes

(1) According to John Langrish, the Beckhampton oval's location was SU 0865 6810. (Eight-figure Ordnance survey references are accurate to 10 meters.) The date given in the text differs from the one given in a preproduction version of Michael Chorost's report, The Summer 1991 Crop Circles (Fund for UFO Research, in press.) The change was made due to more authoritative data supplied by Langrish.

(2) Variations above 10% were considered significant. The data and statistics may be obtained from the secondary author at North American Circle, P.O. Box 61144, Durham, North Carolina, 27715-1144 USA.

(3) The six cases are discussed at length in The Summer 1991 Crop Circles:
The Data Emerges (Fund for UFO Research, Mt. Rainier, MD, in press.)
A condensed version of the report was printed in the Mufon UFO Journal, October 1991, pp. 3-15.

(4) The inventory of Chernobyl emissions is in "Cleanup of Large Areas Contaminated As A Result Of A Nuclear Accident," Technical Reports Series no. 300, International Atomic Energy Agency, Vienna, 1989, p. 104. The inventory of widely distributed human-made radonuclides is in Environmental Radiation Measurements, National Council on Radiation Protection and Measurements Report no. 50, Washington, D.C., 1976, pp. 12-14.

(5) "Environmental Radiation Measurements" (see note 4), 11.

(6) We checked these facts with the primary designer of the device, Dr. Tsahi Gozani of SAIC in California.

(7) We checked these facts with Conrad Knight, a Radiation Safety officer at Duke University Medical Center.

(8) All of the decay/activation parents and products cited were obtained from Edgardo Browne and Richard B. Firestone's "Table of Radioactive Isotopes." New York: John Wiley and Sons, 1986.

(9) The Browne and Firestone reference does not show a deuteron activation which yields Eu-146, but another reference, the Gerhard Erdtmann one,

does. We believe that one is accurate, because Eu-146 should be producible
from a Sm-144 (d, nothing) reaction. Again, we infer deuteron activation.
(Gerhard Erdtmann, "The Gamma Rays of the Radonuclides: Tables for Applied
Gamma-Ray Spectrometry." New York: Verlag Chemie, 1979.)

(10) See, for example, "Circles From the Sky", ed. Terence Meaden.
Souvenir
Press, 1991.

(11) "Analysis and Interpretation of the Luminous-Tube Phenomenon."
Terence
Meaden. Journal of Meteorology v. 16 no. 162 (October 1991): 276-278.

(12) See Chorost, The Summer 1991 Crop Circles, Section IIIB (see note 3.)

(13) See, for example, Stanley Morcom's "Field Work: The Pictogram at
East/West Kennett Long Barrows." The Circular vol 2 no. 1 (March 1991):
10-13. Also Circular Evidence (Delgado and Andrews, Bloomsbury, 1989),
pp. 121-131, and Circles From The Sky, pp. 46, 153-158.

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