

Crop Formation: Paulding, Ohio USA

Laboratory Code: KS-03-106

Material: Wheat stems and heads *Triticum aestivum*.

Formed: Between July 1 and July 4, 1996

Sampled: Two independent samplings around July 12, 1996. One sample group consisted of both plants and soil from Ms. Judy Robinette, Paulding, Ohio. The second plant sampling by Dr. James Buerlein, Ohio State University, Columbus Ohio; submitted by John P. Timmerman.

Supplemental: Detailed soil sampling conducted by Mr. Randy Robinette in January, 1997.

Brief Summary:

The following list of relevant findings is intended to supply the reader with a quick overview of the laboratory results related to the Paulding, Ohio, crop formation. It provides relevant information regarding the relationship between the results obtained in this particular event and those obtained from our previous examinations of several hundred others, from 1990 to the present. The words "statistically significant" mean that one can be confident that there is a greater than 95% probability that the data are anomalous, relative to the normal or control samples. This level of significance is accepted at all levels of scientific research and in all scientific journals as being meaningful.

Relevant Findings:

- 1) Significant node length alterations in the range of 18 to 26% (relative to controls).
- 2) High concentrations of magnetic iron particles (magnetite) occurred within the formation at regions where plant stem node changes are maximum.
- 3) A detailed sampling of the area surrounding the formation (covering around a 0.6 mi. radius) disclosed very low, near normal amounts of magnetic soil particles.
- 4) Microscopic characteristics of magnetite particles indicate meteoritic origins.
- 5) These data are consistent with the concept of organized plasma vortices which through their associated magnetic fields attract meteoritic dust particles.
- 6) Also presented is a possible explanation for the reported "foul odor".
- 7) No significant difference between the germination of seeds from the formation and controls - this agrees with germination results reported by Dr. Buerlein.

Results and Discussion:

This formation consisted of a circle of downed crop with a 46.5 ft. radius. Since we will be presenting, in graphical form, significant alterations in stem node lengths within formation samples, it might be worthwhile at this point to demonstrate the degree of node length uniformity in normal or control plants. The data in Table I, represent measurements from the two independently sampled groups.

Table I

Node length data from normal, control samples taken at the Paulding, Ohio crop formation.

Control Group	Node Length (NI)		N- Plants
	ave.	s.d.	
Robinette	2.75 mm	0.48	106
Buerlein	2.70	0.37	50

The mean node lengths in the two sets of control data in Table I differ by less than 2%; this is in the range of the variations observed in the normal or control plants from most crop formations in which multiple controls are sampled. In the following analyses any sample having a node length change exceeding 18% of the controls is statistically significant. The most detailed and useful sampling was conducted by Ms. Robinette and, for the most part, these sample sets will be discussed below. As shown in her sampling diagram (Fig. 1), sample sets (consisting of 15 to 25 plants per set) were taken along the West and North radii of the formation.

In addition to the wheat plants Ms. Robinette also collected soil samples (200-300g) at the same locations at which plants were sampled. The soil samples were used to conduct what we define as a "magnetic-drag", the purpose being to determine the presence of magnetic material associated with the crop formations. In two previous formations we found clear evidence that the plasma vortex energies which produce visible crop imprints can be associated with meteoritic material. Presumably this interaction occurs during the trajectory phase of the organized plasma as it descends through the atmosphere. One of these unique crop formations occurred at Wiltshire, England, in 1993 and our findings were published in a peer reviewed, scientific journal in 1995 (see reference [1]). The second discovery of meteoritic material occurred in 1994, within a crop formation near Blaine, Minnesota (see ref. [2]).

West Radius:

In our analyses of the Paulding crop imprint we considered the data from the two radii, independently. The reason for this will be made clear later on. The upper curve in Fig. 2 (abscissa is non-linear) summarize the node length changes along the West radius, extending from the epicenter of the formation to the edge at 46.5 ft.; the points at 47 to 197 ft. are from controls taken outside the formation. Each point here represents the mean node length from around 15 to 25 plants. From 0-20 ft. there are no statistically significant node length changes, nor are there any in the controls outside the formation. The significant 26% peak occurs at 40 ft. from the epicenter (or 6.5 ft. from the outer edge of the circle), and then the node lengths sharply decrease toward the edge.

The magnetic-drag results obtained along the west radius are also summarized in Fig. 2 (lower curve), where each location point also corresponds to a plant sampling. These data were obtained in the following manner: after recording the total weight of each sample, the soil was spread out on a plastic sheet. A small horseshoe magnet, around 1700 gauss field strength, was placed inside a plastic bag, then systematically dragged through the soil. After a few passes the material adhering to the bagged magnet is removed and this dragging is repeated until no further material is collected. The amount of magnetic material at each sampling site is then expressed as mg/g soil.

Although there is considerable variation between samples the peak concentration of magnetic particles along the west radius, occurs at the 40 ft. location (Fig. 2 lower curve), which is in the same region as the maximum node expansion (Fig. 2 upper curve). In the magnetic particle data we do not observe the sharp decline in concentration at the edge and 47 ft. locations; however, this is not unexpected, since the "cloud" of magnetic particles could easily spill over a few feet into the upright, standing plants. This is certainly indicated by the fact that very low levels were found farther out in the control area, at the 97, 147 and 197 ft. sample locations.

It should be pointed out that the Geophysical Literature lists an expected optimum level of magnetic particles in normal soil to be in the range of 0.4 mg/g soil. In the Paulding formation we find the deposits of magnetic particles to greatly exceed this normal level.

North Radius:

The node length changes in plants along the north radius (Fig.3 upper curve) are almost the reciprocal of the node changes found in the west radius. In Fig.3 we observe a significant node length reduction at the 30 ft. location with a somewhat lesser reduction at the 40 ft. point. From previous studies we know that quite different patterns of node expansion can occur along different radii within the same circular formation. In a formation at Logan, Utah, these changes were attributed to variations in the rates of energy application at discrete locations in the downed crop area (see ref. [3]). Here we find a somewhat similar situation, although it should be kept in mind that no two crop formations have the same profile of energy application. In many cases we have observed that if the duration of heating is prolonged, the plants dehydrate and tissue shrinkage can occur. For instance, in ref. [4], it was shown that a brief exposure to microwave energy can cause tissue expansion in plant cells, whereas a longer exposure will cause shrinkage. The data in Fig.4 indicate that the north radius received a more prolonged exposure than the west radius.

These differences in exposure duration are also relevant when we compare the deposit of magnetic particles in the north radius with the levels in the west radius. In both radii the maximum deposit occurs in the 40 to 46.5 ft. zone; however the maximum level in the north radius is over 2.5 times the maximum level in the west radius. If, as the node expansion data indicates, the energy exposure along the north radius was more prolonged, then more of the magnetic particles would be deposited, thus agreeing with the empirical findings.

At this point in our study it became important to investigate the level of magnetic particles within surrounding fields and well outside the formation area. For this purpose, fourteen soil samples were taken by Mr. Randy Robinette, within a well thought out and mapped region around the formation site. These fourteen sites completely surrounded the formation and extended out beyond 0.6 mi. in all directions. This soil was dried down in the laboratory and the magnetic-drags conducted. The mean concentration of magnetic particles is listed in Table II for the three sampling regions. The control group includes the 14 samples taken by Mr. Robinette plus those beyond 47 ft. along the north and west radii.

Table II
 Mean level of magnetic particles in soil from major sampling sites at the Paulding, Ohio, crop formation.

Soil Sample Group	mg/g Soil		N-Sites
	ave.	s. d.	
Controls	1.19	3.26	20
West Radius	*22.04	6.92	7
North Radius	*44.60	25.28	7

*- P<0.00

The level of statistical significance ($P < 0.001$) in Table II means that there is less than one chance in a thousand that the difference between the radii and the controls is due to chance alone.

Microscopic Examination of Magnetic Particles:

The particles collected in the magnetic-drags were examined for physical characteristics. In every drag sample the particles had microscopic features characteristic of magnetite (Fe_3O_4) spherules, and in a form known to be associated with meteor showers (ref. [1]). Most of these minute, shiny black spheres were in the size range of 0.5 to 10 microns diameter. Clusters of these spheres were seen to be adhering to soil particles. There was no evidence of oxidation to the hematite (Fe_2O_3) form - this would suggest that the particles had not been in the soil for any length of time. It is of interest to note that this formation occurred at the time of year when the Earth passed through the Perseid meteor cluster; although meteoritic material is constantly showering down through the atmosphere, the presence of the Perseid meteor cloud would explain the source of the very high concentrations of magnetic-drag material found in the Paulding formation.

The fact that the observed level of deposited particles is over 2.5 times higher along the north radius than along the west radius is difficult to account for from the simple dynamics of laminar flow. If, however, we again consider our ion plasma model of an excitable medium in which several types of energies are interacting independently, these spatially-defined differences become more understandable. In such a plasma system we would have charge separation and the build-up of traveling concentration waves of ion clouds containing the meteoritic iron particles; these traveling waves would be directly influenced by local electric fields. The effect of an electric field on an interacting system in which ionic species are being produced and consumed was demonstrated in a well-documented, 1992 paper in the *Journal Science* (ref. [5]). It was demonstrated that these highly organized waves of spatio-temporal patterns can be influenced by a relatively low electric field (around 10 volts/cm), to the point where wave splitting can occur - with even a reversal in the wave direction. Although the dynamics of these processes have complex descriptions, they are readily observed and are size-invariant. Such a wave splitting readily explains the quite different profiles of energy effects along the north and west radii of the Paulding formation.

Associated Foul Odor:

Perhaps a final comment should be made concerning the report by "down wind" residents that on the night of the formation they experienced a very foul odor, to the point where, for a short time, it disturbed their sleep. This was described as very unpleasant, with a "rotten egg smell". If, as clearly indicated by the node-length and magnetic-drag data, the plants and soil were subjected to a transient, high-temperature heating, then a resulting odor would be expected. If the plants and soil were moist, as in fact was reported, heat emitted by the plasma-associated microwave energy within the formation, could very easily account for the high level of soil heating.

As for the rotten egg odor, this also can be explained. In an on-site conversation with Ms. Robinette it was pointed out that in this region the well water has a high sulfur content. Many of the anomalous changes in plants within formations suggest that the ion plasma vortex subjects the plants and soil to high concentrations of negatively charged ions and electrons. In this high-temperature, chemically reducing atmosphere, the sulfur compounds in the soil as well as sulfur-

containing microorganisms could be chemically reduced to hydrogen sulfide (H₂S) gas which has a disagreeable odor, often described as "rotten eggs". One of us (WCL) has had past experience in an experimental greenhouse in which soil was occasionally sterilized at a high temperature (around 400 °F), and during this heating, the entire building was exposed to a very foul odor which was due to the breakdown of organic matter in the soil. When we combine these two situations, the air is really bad!

References:

- [1] Levensgood, W.C. and Burke, J.A., *Semi-Molten Meteoric Iron Associated with a Crop Formation*, Journal of Scientific Exploration, **9**, (1995) pp. 191-199.
- [2] BLT Team, *Meteoritic Material in a Minnesota Crop Formation 1994-1995*, Report No. 52, Feb. 28, 1996.
- [3] BLT Team, *Crop Formation: Logan, Utah, USA*, Report No. 79, March 16, 1997.
- [4] Levensgood, W.C., *Anatomical Anomalies in Crop Formation Plants*, Physiologia Plantarum, **92** (1994) pp. 356-363.
- [5] Sevcikova, H., Marek, M., and Muller, S.C., *The Reversal and Splitting of Waves in an Excitable Medium Caused by an Electric Field*, Science, **257** (1992) pp. 951-954.

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FIGURE 1: Judy Robinette plant and soil sampling diagram (July 12, 1996) for Paulding, Ohio crop formation field-work.

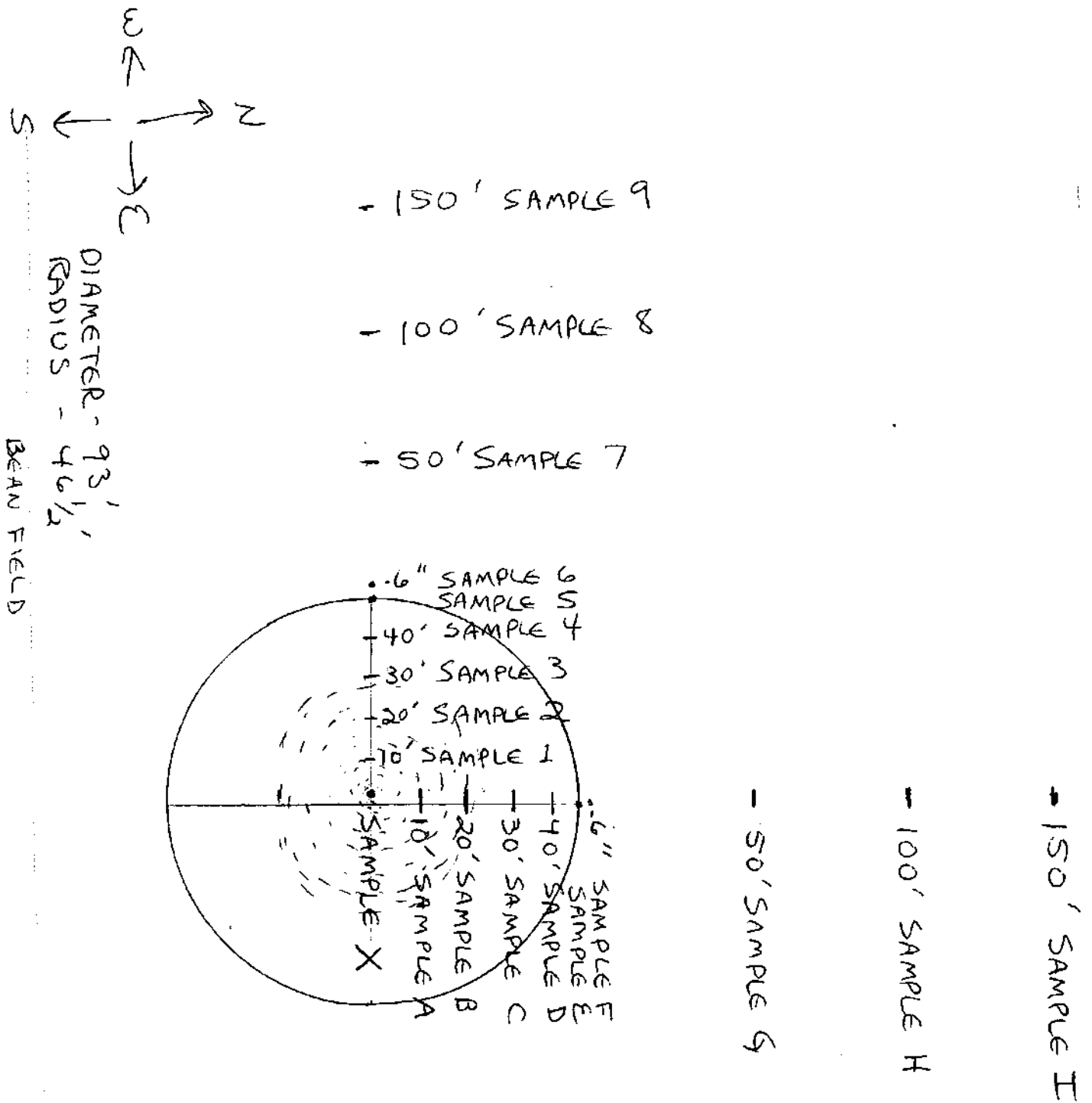


FIGURE 2: Node-length changes in plant samples & controls (top) and magnetic particles in soil samples & controls (bottom) along West radius of Paulding, Ohio crop formation. Note peaks at 40 ft. sampling location in both node-length increase & percentage of magnetic particles.

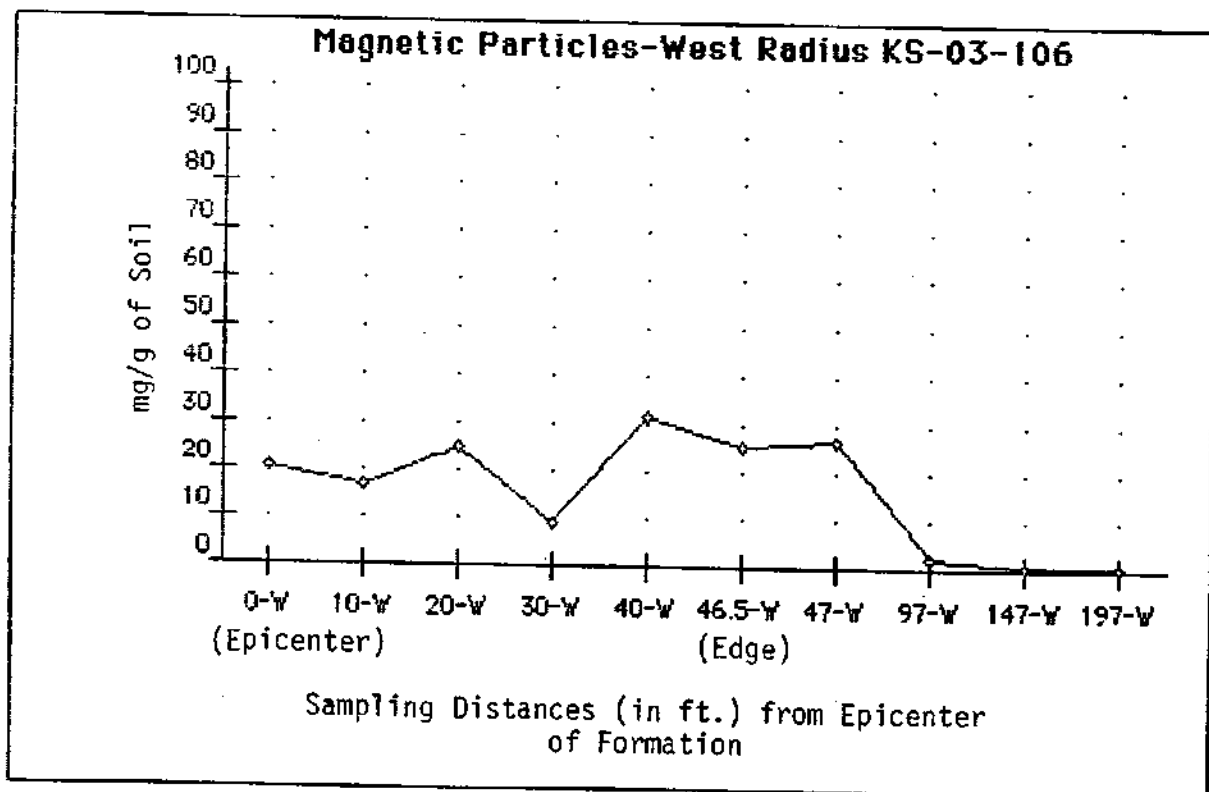
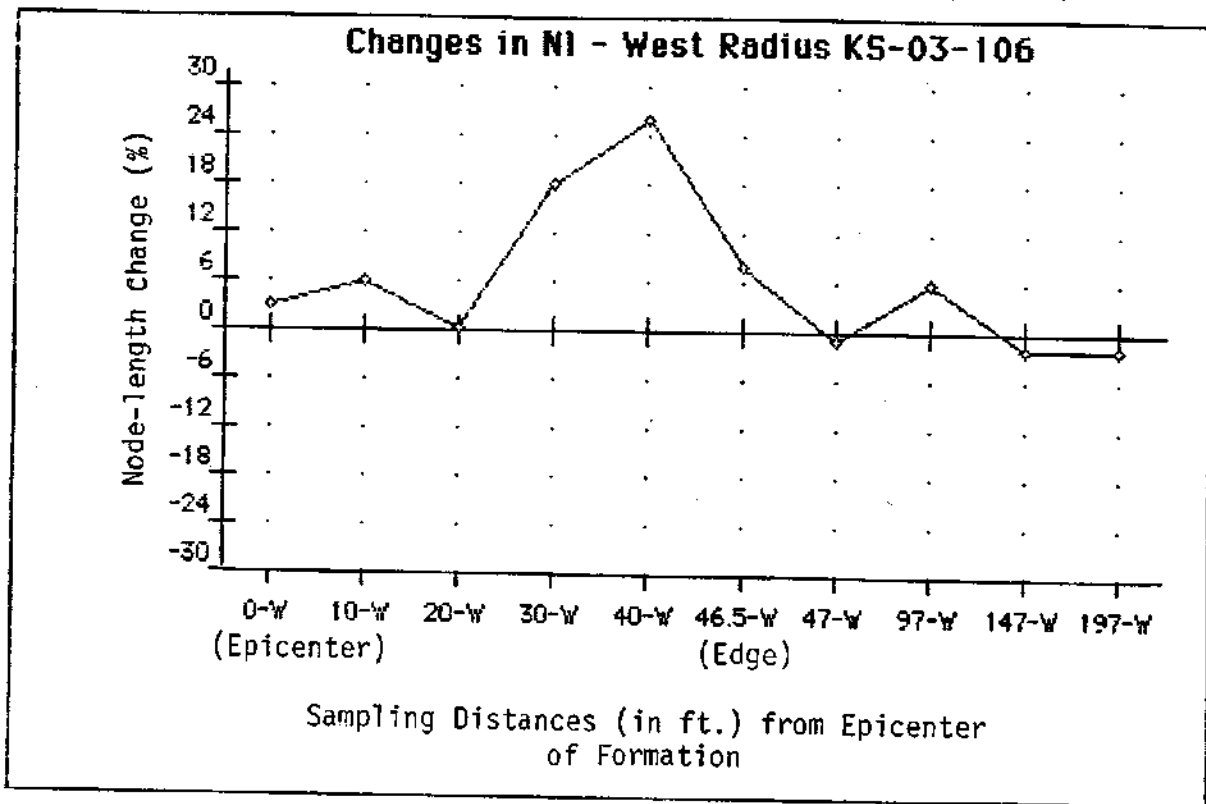
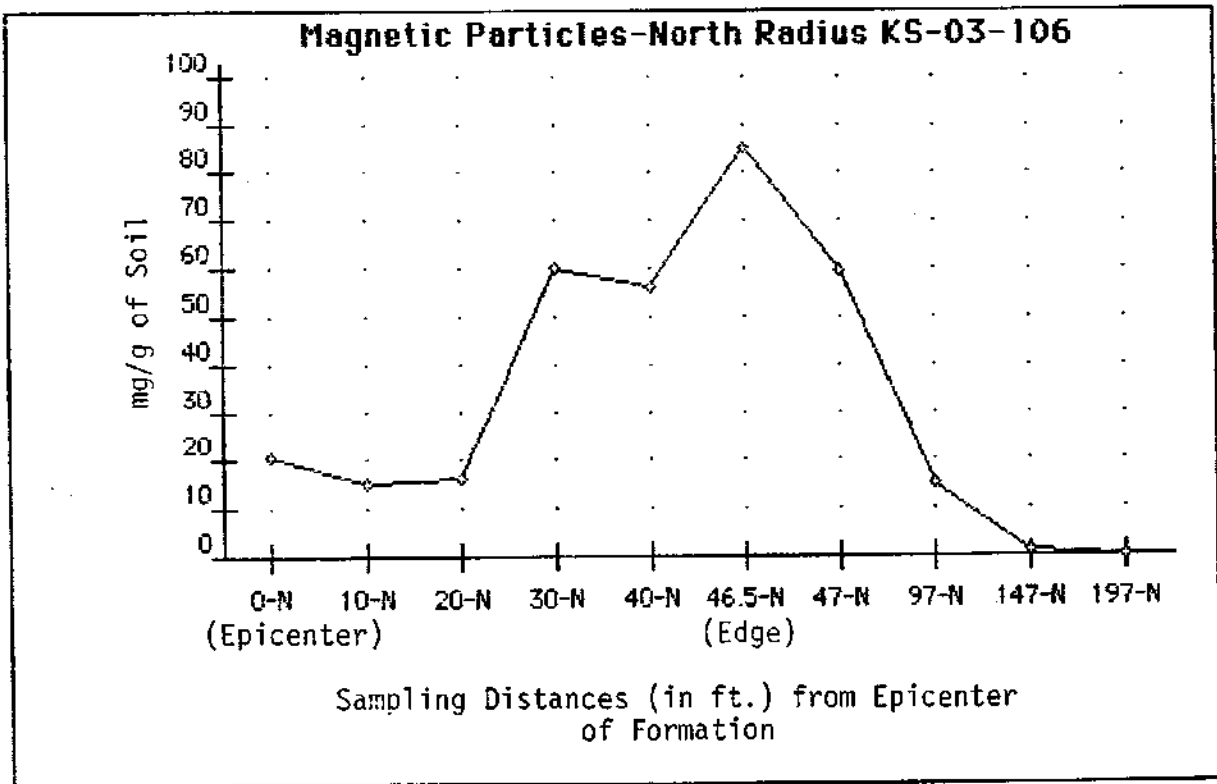
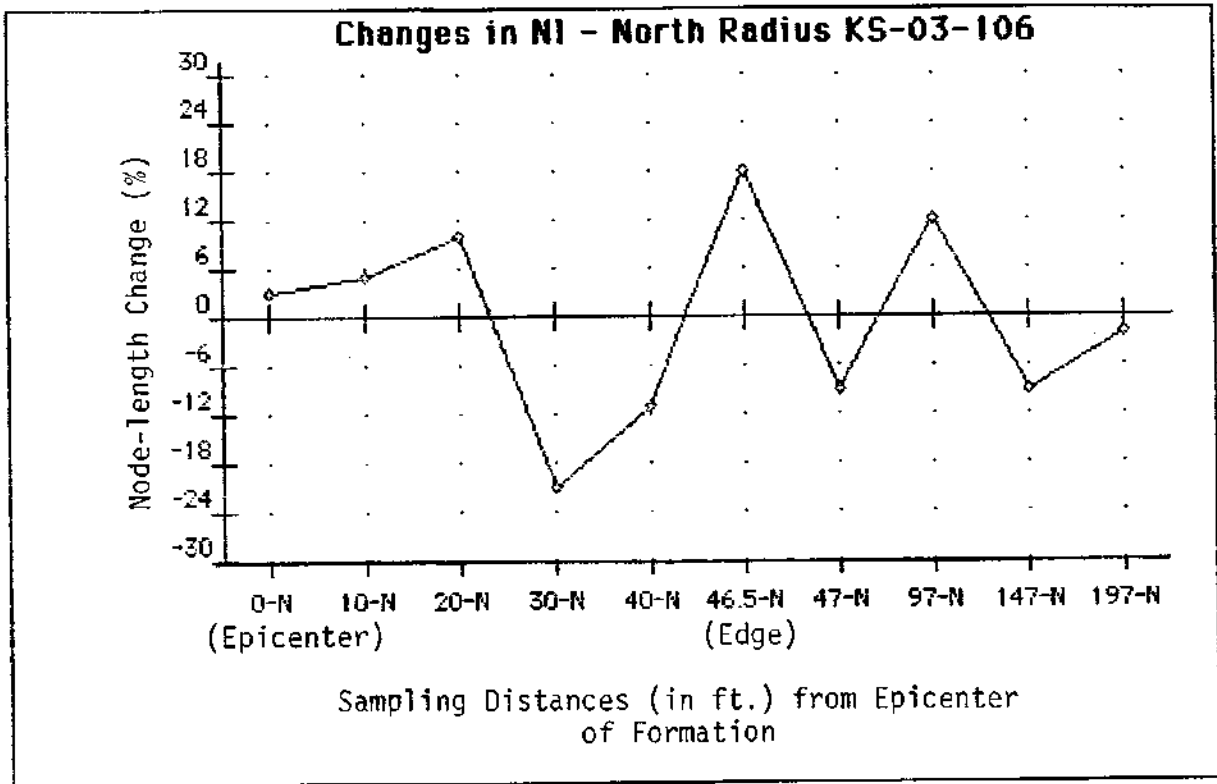


FIGURE 3: Node-length changes in plant samples & controls (top) and magnetic particles in soil samples & controls (bottom) along North radius of Paulding, Ohio crop formation. Marked node-length reduction and increase of magnetic particles around 30-40 ft. sampling locations indicates more prolonged exposure to formation energies than along West radius.



PAULDING, OHIO - 1997 PHOTO ANOMALY

Top photo (1997) shows a "black line" anomaly in air directly above location of 93' crop circle in wheat in 1996 (field now planted in corn). The 1997 photo was taken almost exactly 1 year after 1996 event occurred. Bottom photo shows 1996 circle. Enlargements of anomaly follow. "Black Line" anomalies are regularly seen on photos of crop formations, and are generally assumed to be of no significance. Anomaly photo: Roger Sugden.



BLT RESEARCH TEAM

Box 127

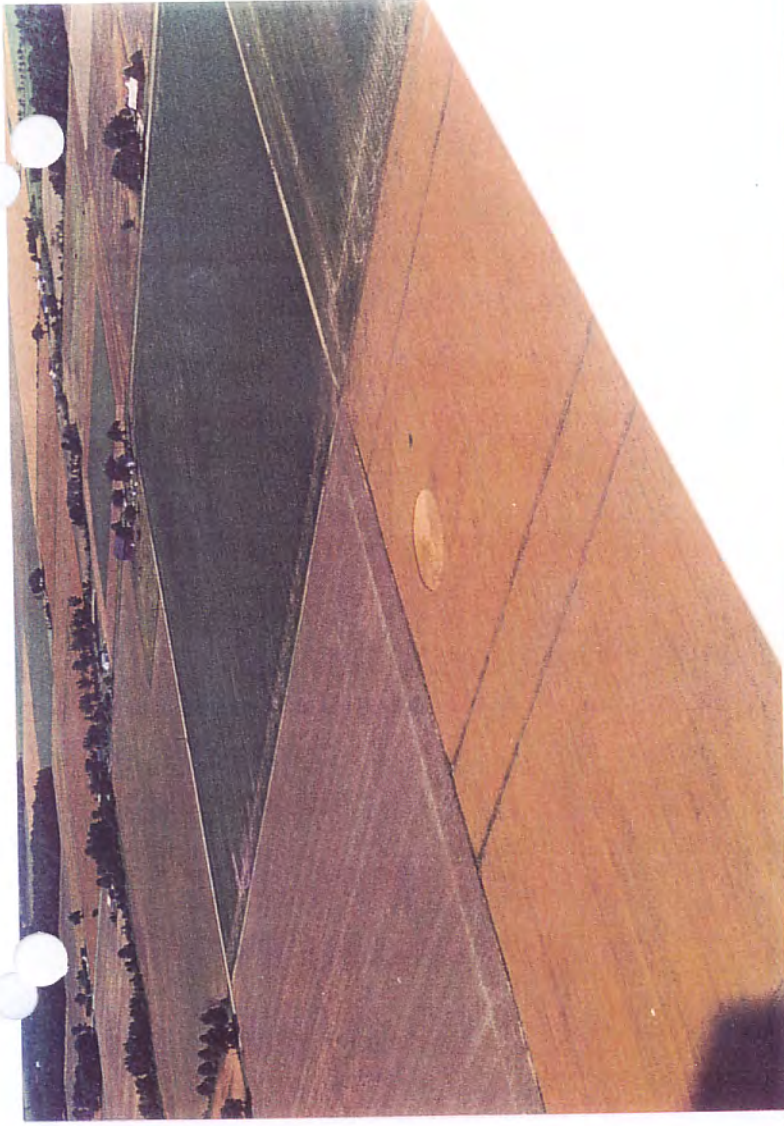
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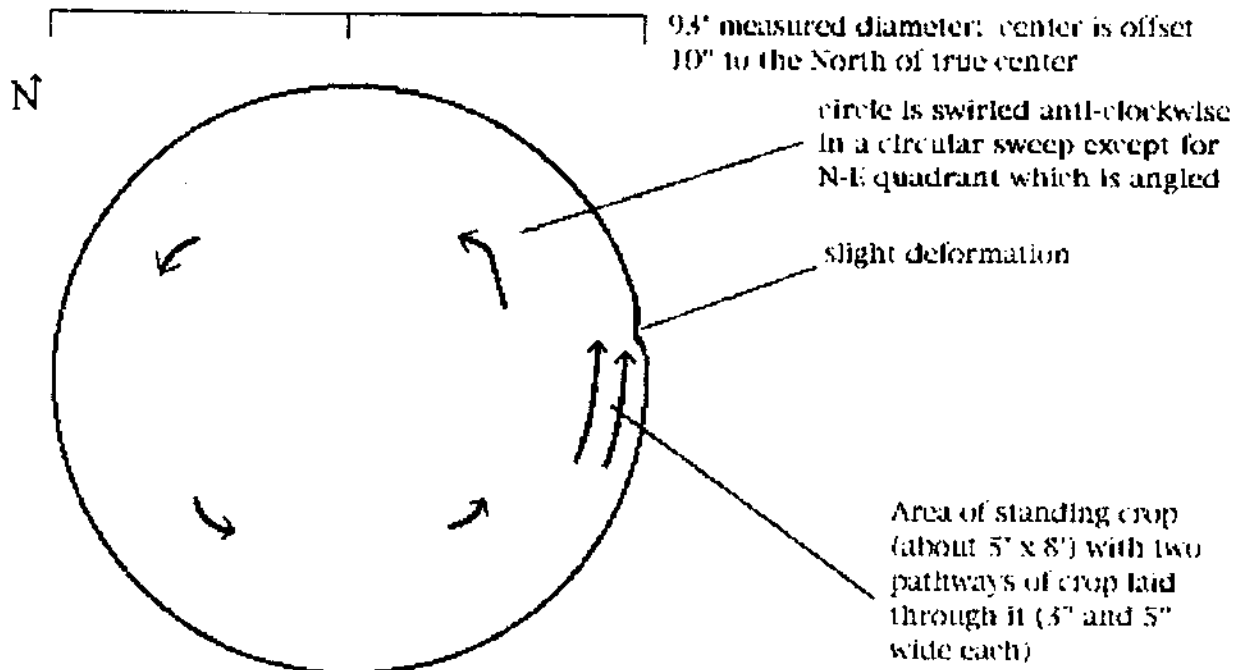
LAB REPORT #80: PAULDING, OHIO (July, 1996)

93' diameter circle in wheat, formed July 2-3, '96 on the Arend Brothers Farm. Dark lines in field on either side of circle are drainage ditches.

Photos: Sandy Dobbelaere, Roger Sugden



Single Circle found in Jackson Township, near Paulding,
Ohio, USA on July 4, 1996 off Paulding County Road 126



When surveyed (July 10), there were many single-standing stalks.

The crop itself was bent right at the point it left the soil. (I cannot emphasize this enough!)
The crop in the immediate center was woven.

Because of the local drought, the stalks and wheat grain heads were very dry, brittle and fragile. In the areas that had not been walked on by the farmers, the researchers and the sheriff, none of the crop was broken or damaged. Even the hairs on the bearded wheat were still intact!

There was a radiation anomaly detected:

using a geiger counter, 10 readings were done at various distances outside the circle to establish a normal background. The readings ranged from 15 "clicks" per minute to 25 "clicks" per minute, with an average of 21 "clicks" per minute.

Inside the circle, at the center, and around the inner edge, the same background radiation numbers were detected. BUT, starting at 6' from the center to 22' from center 2-3 times normal background radiation was detected. Between 44-60 "clicks" per minute, with an average of 52 "clicks" per minute was detected.

In addition, there are drainage ditches in the field located 350 feet apart, the center of the circle was located 175' from both (directly inbetween).

Diagram by Jeffrey Wilson. Circle measurements by the farmer Dan Arend, John Timmerman (C.I.F.O.S.). Radiation measurements by Jeffrey Wilson, Greg Huber (Both CCCS)