

## Crop Formation: College Ward, Utah 1998

**Laboratory Code:** KS-04-110

**Location:** College Ward, Utah

**Material:** Barley (*Hordeum vulgare*)

**Formed:** July 21, 1998

**Sampled by:** Mr. Richard Nielsen on 7-23-98

**Formation Characteristics:** Two large circles; A-95 ft. dia, B-48 ft. dia., circumscribed by a 4 ft. wide path; C and D circles approx. 30 ft. dia.

**Comments:** After collecting the field samples Mr. Nielsen found a "green substance" on his car - which he sampled with Q-tips. After returning home he reported that this material no longer appeared to have a green color.

### Relevant Findings:

- 1) - magnetic drag tests disclosed a significant amount of magnetic material in the soil - microscopic examination revealed the characteristic ovoid shaped particles with surface characteristics typical of magnetite.
- 2) - large range of node expansions in the formations; +0.4% in circle-A, +16% in circle-B, +36% in circle-C and +12% in circle-D.
- 3) - found an approximate, direct correlation between the mean node lengths and the average level of magnetic material within each circle.
- 4) - there was a significant degree of node length partitioning along the sampling radii in circle-B only; +50% and +38% along the NW and SW radii, and a -9% and -11% along the NE and SE radii respectively. This very sharp demarcation in energy input has been observed in a number of other crop formations.
- 5) - "green substance" on Mr. Nielsen's car found to be extremely small (1.9 to 3.7 micrometers dia.) glass like beads composed primarily of the oxides of Al, Si, Mg and Ti. When exposed to UV (as in sunlight) the material fluoresced a brilliant green.

### Results and Discussion:

A total of 95 plant sample sets (approximately 14 plants/set) were examined for node lengths. In addition 94 soil samples were subjected to the magnetic-drag test to determine the content of magnetic material in the soil. With the exception of circle-B (to be discussed presently) there was no evidence of selective node length changes or grouping of magnetic particles.

When the mean values of node lengths (NL) and H-drag material were compared there was as shown in Fig. 1, a roughly linear relationship. In most formations we find that the levels of magnetic material are higher in the immediate region outside the formation than the levels inside. This is readily explained by considering the physics of the forces on particles within a rotating vortex. Here we find higher levels inside the formation. This would suggest that the vorticity or angular momentum was not sufficient to distribute the bulk of the magnetic material outside the formation.

Further evidence for a low degree of angular momentum was provided by the data from circle-B. Here, we find a pattern of node lengths which change quite drastically along specific radii. On the NW and SW radii the node expansions are +38% and +50% respectively, whereas, on the NE and SE radii the levels are -9% and -11%. In one half of circle-B we note significant node expansion and in the opposite quadrants a decrease in node lengths.

We have found in the laboratory that if the microwave energy component is prolonged, one observes a final decrease in node length. In other words the energy in the East quadrants of circle-B were applied over a much longer interval than in the West quadrants. This partitioning of energy is in line with what one would expect in a thermodynamically unstable system operating under the principals of chaotic-self organization.

A microscopic examination of the green substance on Mr. Nielsen's car revealed the presence of extremely fine, spherical particles adhering together (Fig. 2) - particle size ranged from 1.9 to 3.7 micrometers. The spheres were insoluble. Under a microscope converted to accommodate a UV source, each tiny bead (Fig. 3) appeared to fluoresce very strongly in the green region. In Fig. 4 the Energy Dispersive Spectroscopy (EDS) disclosed high peaks of Al, Si, Mg and Ti plus a carbon peak which may be accounted for by contamination from plant detritus on the outer surface of the beads. In general the EDS indicates a aluminum silicate glass doped with titanium. The UV radiation in sunlight would cause the glass to fluoresce thus accounting for the green color when first seen and the disappearance of color later in the day.

The distribution patterns in the node lengths and the magnetic drag data make it quite clear that the plasma vortex energies were involved in this formation. The presence of the fluorescent glass beads remains an unknown factor.

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Fig 1.

## Relationship between Node Lengths and Magnetic material in circle formations (KS-04-110)

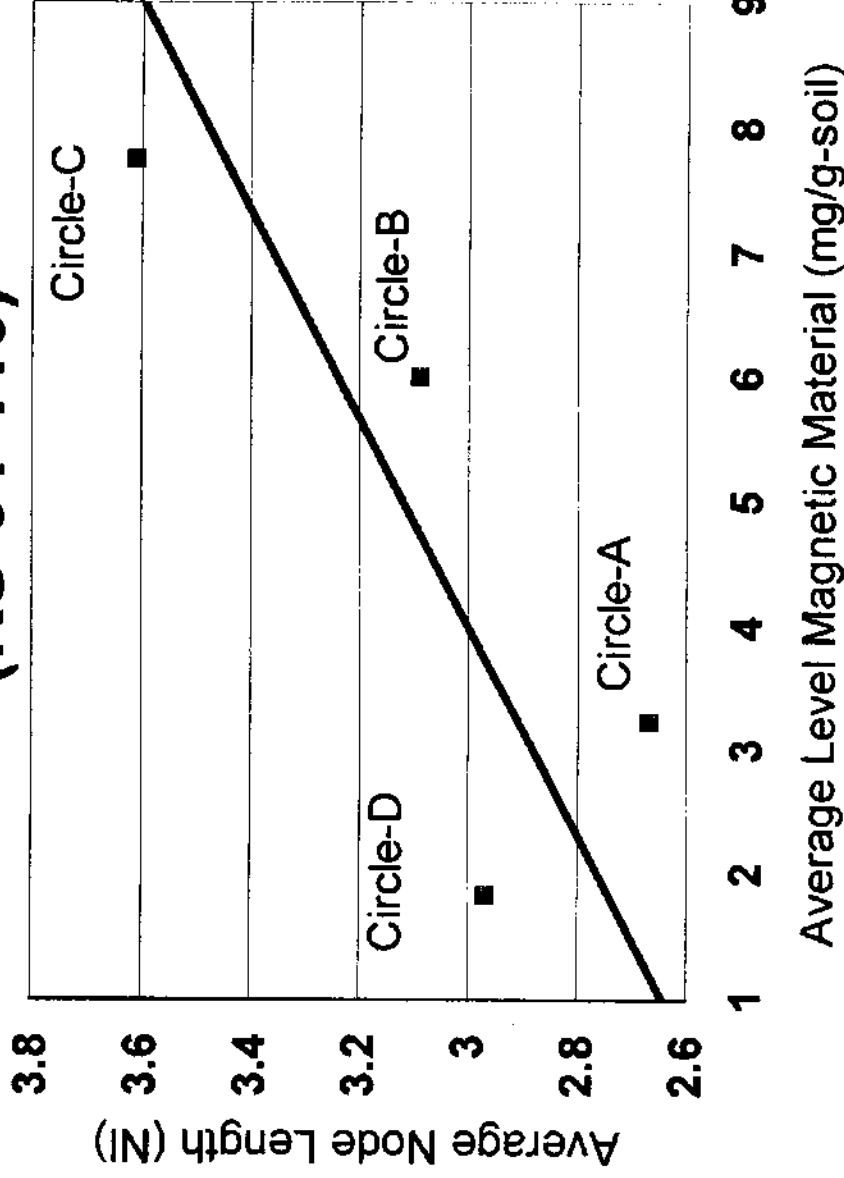
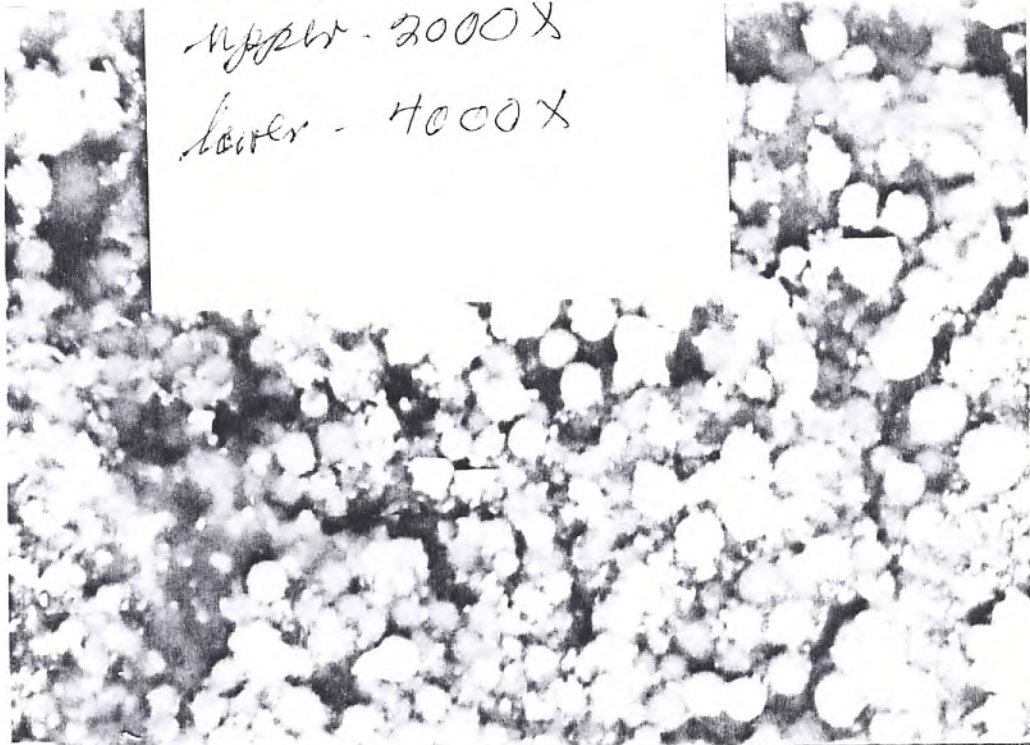


Fig 2 for report

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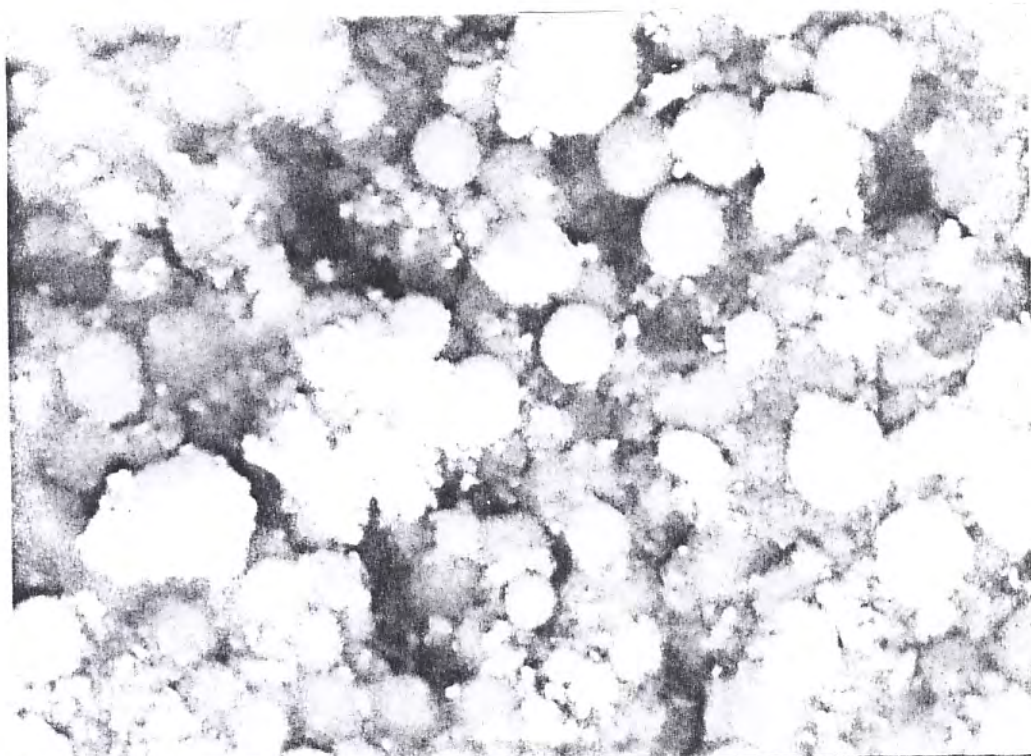
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lower - 4000X



5Pa 04-MAY-99

WD16mm 15.0kV x2.0k 20um



5Pa 04-MAY-99

WD16mm 15.0kV x4.0k 10um

COLLEGE WARD, UTAH - July, 1998

[KS-04-110]

Formed: July 20-21, 1998; Found: July 22, 1998; Sampled: July 26, 1998  
Crop: Barley Approx. 315' long pictogram; large circle 95' diameter;  
ringed circle 48' diam; 2 small circles 30' diam. each; paths 4' wide each.  
Lay in circles all counter-clockwise. Note extensive non-geometrically-  
downed crop in field adjacent to formation & "rippling" effect in close-up  
photo. Field-team experienced physiological effects & reported camera  
malfunctions.



Green substance  
deposited on  
vehicle during  
examination of  
College Ward, Utah  
crop formation.  
Photograph in  
ultraviolet. 100x.

