Research Report From: Pinelandia Biophysical Laboratory Grass Lake, Michigan, 49240

Crop Formation: South Lyon, Michigan 1997 Report No. 120

Laboratory Code: KS-04-16 Date: October 19, 2000

Location: South Lyon, Michigan

Material: Soil samples. Formed: Around 1994

Sampled by: Sampled and photographed by Mr. Jeffery Wilson and Friends in 1997

Formation Characteristics: Three circles of discolored grass-

Circle #1 - near highway ~ 20 ft. dia.

Circle #2 - \sim 400 ft. south of circle #1 (\sim 20 ft. dia.)

Circle #3 - just east of Circle #1 ~ 30 ft. dia.

Unique Aspects:

- at the date of the 1997 sampling the formations had been observed in the park for three years.

- grass grows very poorly in circle areas (see Mr. Wilsons composite photograph in Fig. 1).
- land has remained untouched (State Park) since date of formation.
- at the time of sampling no green grass was available for sampling within the circles.

Summary of Findings:

- 1) the level of magnetic drag material in soil samples taken from the circles, was significantly higher than the normal background (control) level of 0.4 mg/g-soil.
- 2) in all three grass formations the distribution of magnetic material ranged from low near the center of the circles to very high at the edges.
- 3) the pattern of magnetic particle distribution was in agreement with a physical model dealing with forces on particles within a rotating plasma vortex system.

Details of Research:

Soil samples were taken along the same radial pattern in each of the circles. The 13 sampling sites are shown in Fig.2. Each submitted sample contained between 70 and 200 grams soil.

The results from the magnetic-drag tests are summarized in Fig's 3, 4 and 5 - where the shaded, wedge shaped, vertical bars indicate the relative amount of magnetic material. Each cm of bar height represents 4.0 mg/g-soil, or 10 times the normal (control) level of 0.4 mg/g-soil. In all

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three circles the amount of magnetic material increases from the center of the formation to the outer perimeter.

In a later sampling taken approximately one week after sampling the circle areas the level of magnetic material was found to be high, even at 300 to 400 ft. from the circles. This, however, is not an unusual situation. In subsequent studies we have found that when the amount of H-drag material exceeds 10-20 mg/g-soil it is often necessary to sample as far as one-half mile from the formations before the level of magnetic material reaches the normal background range of 0.4 mg/g-soil.

In many crop formations we find that the distribution of magnetic material is linear with distance from the epi-center of the formation. This type of distribution has been shown to agree quite closely with a mathematical model formulated from the physics of centrifugal forces operating within a rapidly rotating plasma vortex system.

Dr. W.C. Levengood



Sample distribution for all 3 circles

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