



North American  
Crop Circles  
and  
Related  
Physical Traces  
in 1990

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

Winnipeg, Manitoba  
Canada

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This report 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, Gordon Mathews, Walter Nilsson, Chris Rutkowski, Vladimir Simosko and Guy Westcott.

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

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

## North American Crop Circles in 1990

As of January 1, 1991, there were 86 crop circles and/or physical traces associated with UFO sightings reported to UFOFORUM or otherwise communicated through the North American Institute for Crop Circle Research during the 1990 calendar year. These represented 45 different cases or locations, since some cases had as many as 10 separate circles/traces associated with the location. The physical effects ranged from holes gouged out of the ground to the classic British-style crop circle that has become so familiar to the general public through media programs.

There were 61 unusual ground markings (UGMs) found in the United States, and 25 reported in Canada. The disproportionate number in Canada is likely an artefact of the disjointed information network of North American crop circle researchers and problems in collecting the data. It is probable that many other cases exist, but the information has yet to reach researchers for a number of reasons. Indeed, in the case of physical traces associated with UFO sightings, the cases noted in this study are barely representative of the reports throughout North America.

There was no evident trend in any characteristic of the UGMs. Statistical studies conducted on the data did not suggest any particular unifying explanation. The UGMs were classified in the following categories:

1. Flattened Circle
2. Flattened Ring
3. Burned Circle
4. Burned Ring
5. Burned and Flattened
6. Concentric Rings
7. Vegetation Missing or damaged
8. Depression
9. Hole(s)
10. Other Markings or residue

It can be noted that the classification system is not mutually exclusive, and that in some cases, combinations of two or more categories have been found.

If we consider the number of UGMs per category in the United States and Canada, we can note how the cases are distributed. Twice as many flattened circles were found in the United States as Canada, though Canada had many more concentric rings.

There seemed to be a statistical difference in the direction of swirl within crop circles. Both clockwise and counterclockwise swirls were regularly reported, though there was a slight overabundance of observed counterclockwise effects. The difference was minimalized, however, when only one country's UGMs was considered. A direction of swirl was not reported in all cases.

In all analyses, it should be realized that there were problems in the collection and preparation of data. There is a difference between the number of rings found and the number of sites involved, simply because a single site could have a dozen or more crop circles associated with it. Each UGM is treated separately because it may have different dimensions and characteristics. This is in agreement with the way in which UGM statistics are compiled in Britain and elsewhere. However, this is not entirely satisfying, since in an extreme case where perhaps thirty circles are found in one field, and it is the only case recorded for that area in a year, it could be argued that there were either thirty circles found that year, or that there was only one incident reported. By itself, neither statistic reflects the true picture or nature of the phenomenon.

In Canada, the most common crop affected was wheat, whereas grassy fields were most affected in the United States. A variety of different crops were affected in the United States, though this did not occur in Canada. Flattened circles occurred most often in grass, and were also the victims of "burns", another common UGM that may or may not be related to crop circles. Concentric circles seemed to form almost exclusively in wheat.

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Number of UGMs by Category

| UGM                     | Total | USA | CN |
|-------------------------|-------|-----|----|
| 1. Flattened Circle     | 27    | 19  | 8  |
| 2. Flattened Ring       | 4     | 3   | 1  |
| 3. Burned Circle        | 15    | 14  | 1  |
| 4. Burned Ring          | 3     | 3   |    |
| 5. Burned and Flattened | 11    | 10  | 1  |
| 6. Concentric Rings     | 10    | 1   | 9  |
| 7. Vegetation Missing   | 3     | 2   | 1  |
| 8. Depression           | 1     |     | 1  |
| 9. Hole(s)              | 2     | 1   | 1  |
| 10. Other               | 2     | 2   |    |

Direction of Swirl (When Specified):  
Clockwise or Counterclockwise

|                  | USA | CN |
|------------------|-----|----|
| Clockwise        | 4   | 4  |
| Counterclockwise | 10  | 6  |



Direction of Swirl (When Specified)  
in Selected UGM Type:  
Clockwise or Counterclockwise

|                  | Flattened Circle | Flattened Ring | Concentric Rings |
|------------------|------------------|----------------|------------------|
| Clockwise        | 14               | 2              | 3                |
| Counterclockwise | 4                | 2              | 1                |



UGMs per Crop/Ground Type

|     | Grass | Wheat | Oats | Sorghum | Alfalfa | Corn | Gravel |
|-----|-------|-------|------|---------|---------|------|--------|
| USA | 46    | 2     | 3    | 3       | 3       | 1    | 1      |
| CN  | 4     | 16    |      |         |         |      | 1      |

## Sizes of UGMs

### Flattened Circles [diameters in metres]

DATA: 3.3, 3.3, 3.3, 3.3, 3.3, 3.3, 3.3, 3.3, 3.3, 1.7, 18.0,  
21.0, 10.0, 20.55, 10.7 7.7, 18.9, 3.0, 12.05, 38.1, 9.1,  
9.1, 18.3, 18.3, 14.2

Average Diameter = 10.7 m

[Note: Cases where the UGM is elliptical rather than circular, an average of both axes is used for the diameter of the UGM.]

Similarly, from the data given in the case listing, the following measurements are determined:

Flattened Rings: Average Diameter = 9.8 m; Average Width = 10 cm

Burned Circles: Average Diameter = 7.1 m

Burned Rings: Average Diameter = 4.5 m; Average Width = 43 cm

Concentric Rings: Average Diameter = 11.5 m;

Average Width = 62.9 cm

Burned and Flattened: Average Diameter = 2.7 m

Average Width = 22.2 cm

Vegetation Missing/Damaged: Average Diameter = 6.3 m

Average Width = 65 cm

Depression: Average Diameter = 9.1 m; Average Width = 15 cm

### UGM Categories versus Crop/Ground Type

|       | Grass | Wheat | Oats | Sorghum | Alfalfa | Corn | Gravel |
|-------|-------|-------|------|---------|---------|------|--------|
| FC    | 14    | 7     | 1    | 3       |         | 1    |        |
| FR    | 2     |       | 2    |         |         |      |        |
| BC    | 15    |       |      |         |         |      |        |
| BR    |       |       |      |         | 3       |      |        |
| BF    | 9     | 1     |      |         |         |      |        |
| CR    | 1     | 9     |      |         |         |      |        |
| VM    | 3     |       |      |         |         |      |        |
| D     |       |       |      |         |         |      | 1      |
| H     | 2     |       |      |         |         |      |        |
| Other |       | 1     |      |         |         |      | 1      |

This analysis has given us a limited amount of insight into the nature of North American crop circles. We can see that there is a wide variety of UGMs being reported, but only about half are of the kind that may resemble the British corn circles popularized by the media. Readers are free to extract other information from the data presented here. Because the exact cause of the UGMs is still unknown, it is difficult to determine what kinds of data are important. More to the point, it is difficult to ensure that the same information is collected for each case, especially in North America, which is considerably larger than England and much more difficult to cover in terms of investigation teams. It is suspected that the data presented in this study represent only a portion of the total number of cases for 1990, though efforts to obtain the required information were made when and where possible.

It should be remembered that this is a preliminary study of the first "wave" of crop circles in North America, and that the co-ordination of investigations has just begun. Perhaps the answer is as simple as "hoax", but there are many questions that arise despite the explanation. What kind of data is required?

This brings up another important question: are crop circles distinguishable from other physical trace cases? Only a few UGMs noted for 1990 had associated UFO sightings, which is consistent with the majority of the British cases. This is not to say that UFO reports were not made about the same time or in the surrounding region, since there were several UFO reports in both Saskatchewan and Manitoba during the period when crop circles were found. But the real problem is in the classification of UGMs. Should burned circles be included in the analyses of flattened crop circles? What about cases of missing vegetation or soil? Which categories can be considered? The answer is not clear, especially since there are cases on record with combinations of several categories.

In North America, only a handful of UGMs were anywhere near as complex as the British "pictograms". We can, however, note that the British cases seemed to evolve over a considerable period of time; the British corn circles have been said to have formally begun in about 1980. It could be suggested that the American versions are simply in an early stage of development. But there are problems with this chronology. It can be shown that there are records of British UGMs dating back much further than 1980; Ted Phillips' trace catalog has dozens of British cases during the first half of this century. It would seem logical, then, that an examination of crop circles (or UGMs in general) would have to extend backwards into history much farther than 1980. This is more evident when we consider American circles and UGMs as well, since we again have records of these phenomena dating back many decades. An early suggestion that the crop circles "started" in Britain and then crossed the Atlantic does not take into account the historical perspective.

Further to this idea, it could be suggested that the British circles are fundamentally different from their American counterparts. This could certainly be true. At the very least, the great numbers of British circles (between 500 and 1000, depending on the source) imply that something beyond the American experience is occurring. Some researchers have said that the American circles are hoaxes, whereas the British circles are "real". It is obvious that the situation is more complex than that.

It will be noted that this North American sample includes several other kinds of physical traces in addition to the British-style "crop circle". There are "burns" and depressions, holes and other effects, not usually considered in the British perspective. This is because American researchers often use the term "circle" to describe a variety of traces. In addition, some researchers convinced of the UFO connection regard crop circles as a subset of physical traces left by the aliens. For the sake of completeness, therefore, it was considered necessary to list all the reported UGMs, regardless of category, but with breakdowns of the numbers in each classification.

If we begin to consider the various explanations for the circles, we can be led to a number of different conclusions. It should be apparent that if we include all the reported UGM cases, there will be a combination of hoaxes, natural effects and "real" phenomena. (Skeptics will argue that the third category is non-existent.)

We can also ask a much more fundamental question: are crop circles of any relevance to UFO research? Some writers have suggested that crop circles are not the same kind of phenomena that are considered "physical traces from UFO landings". This is in itself a problematic position. Fortean researchers around the world have collected accounts of trace cases over a considerable period of time. The best-known of these is Ted Phillips' catalogue which in 1975 included about 800 reports of everything from "angel hair" falls to burned areas following the observation of a "flying saucer". Among his collection were many reports of UGMs which we now know more familiarly as "crop circles": flattened circular patches in grass, grain or other crops. In a number of cases, such a circle was found immediately following the "takeoff" of a "landed" UFO. Variations include the discovery of a circle some time after the observation of a UFO, but at the spot where the UFO had been seen on the ground. Phillips' collection of data is said to presently number over 4000 cases.

In our collection of 1990 North American cases, only 4 of 46 cases (8.7%) had associated UFO sightings. It has been suggested that about the same percentage (or smaller) is true for Britain. Despite this, UFOs have been deemed as one explanation for the crop circles. Some believe that aliens are "communicating" with us earthlings in a peculiar code: the pictograms. A variety of other associated effects have been claimed: unusual noises heard on tape recordings made at circle sites; malfunctioning of electronic equipment; dowsers report great success at detecting "earth energy"; animals are said to become agitated or nervous when brought to a circle site. These and other effects are said to indicate that something "special" is occurring at circle sites: something parapsychical or extraterrestrial.

These effects generally have not been noted at Canadian sites in 1990, and none have been officially reported for the American sites. This does not mean that such effects may not exist - nor does it necessarily negate the interpretation of the effects as being due to an otherworldly cause. What this does mean is that crop circles are likely a complex phenomenon with similar explanations as their UFO cousins. There are four basic explanations for crop circles:

1. Extraterrestrials
2. Wind Phenomena
3. Hoaxes
4. Other

The first has already been noted, and is favoured by researchers such as Colin Andrews, Pat Delgado, Michael Chorost and Grant Cameron. The second explanation includes the "vortex" theories advocated by Terence Meaden, Jenny Randles, Paul Fuller and Guy Westcott. The hoax theory is held by the skeptical members of CSICOP. The category of "other" includes such things as the flattening of crops by mating hedgehogs, the actions of mutant grasshoppers, and the result of secret military projects.

It would seem most logical to offer a poststructuralist alternative; it is simple to use deconstructive reasoning to examine all of the above theories. The solution is that no theory is inherently "wrong", and all theories are "right". While this seems a bit unwieldy, consider the arguments as a whole: no one theory adequately explains all of the effects.

We are left with a peculiar collection of data; there can be no denying that crop circles were found, but we are faced with unusual ground markings. The easy explanation is that they are hoaxes, but this ignores "eyewitness" observations of UFOs and also ignores the "eyewitness" observations of whirlwinds laying cornstalks in neat, circular patterns. We can further ask why no one has claimed the \$25,000 (CDN) or 5,000 quid rewards if hoaxes are the real answer. And how were the circles made, really? Is this another planned endeavour by CSICOP to make ufologists look bad? Are stilts and rollers the instruments of choice?

But, if winds and vortices are the explanation, then why do circles form in valleys, hillsides and on knolls? Is Britain's change in weather so incredibly dramatic that hundreds of circles can form in 1990, compared with only a handful a decade ago? And exactly what mechanism is responsible, since the theoretical models proposed to date have been constantly changed to account for the differing conditions and observations of the circles? Why is Britain graced (or plagued) with the circles in such abundance? Why not Alberta, or Delaware?

The "explanation" that aliens are the culprits is no less satisfying. Why are there not more UFOs seen at the circle sites? Indeed, the absence of accompanying UFO sightings with each crop circle site is perhaps the best evidence in support of the contention that crop circles are not simply sub-classes of physical trace cases. Where is the radiation or the non-terrestrial metal? If the aliens are communicating with us, wouldn't there be a better way than pictograms? And yet: crop circles do resemble classic "saucer nests" like those at Tully and Langenburg many years ago; hoaxes have been proven in several cases; winds are the cause of many kinds of crop damage.

It seems necessary to consider several alternatives when examining crop circle cases (or the broader classes of UGMs). It is very likely that any data in support of a natural explanation has been contaminated by hoaxes and other influences. This is quite analogous to the UFO problem itself. Certainly some cases are attributable to hoaxes, insects, bolides, aircraft, hallucinations, balloons, kites, birds and other conventional objects. Somewhere, in all of the data, there may be some bona fide UFOs. But which ones?

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The following pages contain the raw, coded data gathered in preparation of this report. The key to the data is given, followed by the data itself, then an annotated list of cases similar in nature to the Phillips catalogue.

Coding Key for Crop Circle Data

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | L | P | C | N | U | C | D | D | W | T | S | S | T | M |
| A | O | R | O | U | F | R | I | I | I | Y | W | A | E | A |
| T | C | O | U | M | O | O | A | A | D | P | I | M | S | R |
| E | A | V | N | B | P |   | M | M | T | E | R | P | T | K |
|   | T | / | T | E |   |   | 1 | 2 | H |   | L | L | S | S |
|   | I | S | R | R |   |   |   |   |   |   |   |   | E |   |
|   | O | T | Y |   |   |   |   |   |   |   |   |   |   |   |
|   | N |   |   |   |   |   |   |   |   |   |   |   |   |   |

900809    SOMEWHERE,SK                            CN 01 U W 15.2 12.8 847 FR CW S T M

DATE: year/month/day

LOCATION: nearest city,town,village

PROV/ST: province or state

COUNTRY: country

NUMBER: circle/ring number (at site) [I.E. if 3 rings: 01,02,03]

UFO: UFO seen at site previous to discovery of physical trace

CROP: affected crop or ground material: A=SORGHUM, B=BEANS,  
 C=CORN, D=RICE, F=ALFALFA, G=GRASS, I=ICE, M=MARSH,  
 N=COTTON, O=OATS, P=POTATOES, R=GRAVEL, S=SNOW, T=TREES,  
 V=CLOVER, W=WHEAT, X=SUGAR BEETS, Y=TOBACCO, Z=BARLEY

DIAM1: major axis of circle/ring (in metres)

DIAM2: minor axis of circle/ring (in metres)

WIDTH: width of ring (in centimetres)

TYPE: type of physical trace: BC=BURNED CIRCLE, BF=BURNED AND  
 FLATTENED, BR=BURNED RING, CR=CONCENTRIC RINGS,  
 DP=DEPRESSION, EG=ENHANCED GROWTH, FC=FLATTENED CIRCLE,  
 FR=FLATTENED RING, HO=HOLE, OT=OTHER, SG=STUNTED GROWTH,  
 VC=VEGETATION CALCINED, VD=VEGETATION DEAD,  
 VM=VEGETATION MISSING, YG=YELLOWING OF GRASS

SWIRL: ClockWise or CounterClockwise

SAMPLE: samples taken by investigators

TESTS: tests done; results possibly available

MARKS: other markings/traces observed or noted

|    |        |                         |       |     |      |      |     |    |    |       |
|----|--------|-------------------------|-------|-----|------|------|-----|----|----|-------|
| 1  | 900308 | MARS, PA                | US 01 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 2  | 900308 | MARS, PA                | US 02 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 3  | 900308 | MARS, PA                | US 03 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 4  | 900308 | MARS, PA                | US 04 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 5  | 900308 | MARS, PA                | US 05 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 6  | 900308 | MARS, PA                | US 06 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 7  | 900308 | MARS, PA                | US 07 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 8  | 900308 | MARS, PA                | US 08 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 9  | 900308 | MARS, PA                | US 09 | U G | 02.4 | 02.5 | 018 | BF |    | S T   |
| 10 | 900517 | FINLEYVILLE, PA         | US 01 | G   | 16.5 | 16.5 | 060 | CR |    | S T   |
| 11 | 900627 | WARSAW, IN              | US 01 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 12 | 900627 | WARSAW, IN              | US 02 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 13 | 900627 | WARSAW, IN              | US 03 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 14 | 900627 | WARSAW, IN              | US 04 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 15 | 900627 | WARSAW, IN              | US 05 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 16 | 900627 | WARSAW, IN              | US 06 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 17 | 900627 | WARSAW, IN              | US 07 | G   | 01.7 | 01.7 |     | FC | CC | S T   |
| 18 | 900627 | WARSAW, IN              | US 08 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 19 | 900627 | WARSAW, IN              | US 09 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 20 | 900627 | WARSAW, IN              | US 10 | G   | 03.3 | 03.3 |     | FC | CC | S T   |
| 21 | 900699 | BELGRADE, MO            | US 01 | G   |      |      |     | HO |    | M     |
| 22 | 900699 | MILAN, IL               | US 01 |     |      |      |     |    |    |       |
| 23 | 900708 | BIRD'S HILL, MB         | CN 01 | G   |      |      |     | HO |    | M     |
| 24 | 900799 | WILLISTON, ND           | US 01 | U G | 06.0 | 06.0 |     | BC |    |       |
| 25 | 900799 | WILLISTON, ND           | US 02 | U G | 06.0 | 06.0 |     | BC |    |       |
| 26 | 900799 | WILLISTON, ND           | US 03 | U G | 06.0 | 06.0 |     | BC |    |       |
| 27 | 900799 | WILLISTON, ND           | US 04 | U G | 06.0 | 06.0 |     | BC |    |       |
| 28 | 900799 | WILLISTON, ND           | US 05 | U G | 24.0 | 24.0 |     | BC |    |       |
| 29 | 900799 | WILLISTON, ND           | US 06 | U G | 24.0 | 24.0 |     | BC |    |       |
| 30 | 900806 | HURON, SD               | US 01 | G   | 03.6 | 03.6 |     | BC |    |       |
| 31 | 900806 | HURON, SD               | US 02 | G   | 03.6 | 03.6 |     | BC |    |       |
| 32 | 900806 | HURON, SD               | US 03 | G   | 06.7 | 06.7 |     | BC |    |       |
| 33 | 900806 | HURON, SD               | US 04 | G   |      |      |     | BC |    |       |
| 34 | 900807 | LEOLA, SD               | US 01 | W   | 18.3 | 12.2 | 150 | OT |    | M     |
| 35 | 900810 | ALVORD DESERT, OR       | US 01 | R   | 99.9 | 99.9 |     | OT |    | M     |
| 36 | 900818 | TWEEDSMUIR, SK          | CN 01 | W   | 07.6 | 07.6 | 060 | CR | CW | S T   |
| 37 | 900818 | ST. FRANCOIS XAVIER, MB | CN 01 | W   | 18.0 | 18.0 |     | FC | CC | S T   |
| 38 | 900822 | ROSSER, MB              | CN 01 | W   | 21.0 | 21.0 |     | FC | CC | S T   |
| 39 | 900825 | CHICORA, PA             | US 01 | O   | 09.8 | 09.7 | 005 | FR | CW |       |
| 40 | 900825 | CHICORA, PA             | US 02 | O   | 10.4 | 10.0 | 005 | FR | CW |       |
| 41 | 900825 | CHICORA, PA             | US 03 | O   | 10.0 | 10.0 |     | FC | CW |       |
| 42 | 900826 | PETERSFIELD, MB         | CN 01 | W   | 20.7 | 20.4 |     | FC | CC |       |
| 43 | 900827 | DOMAIN, MB              | CN 01 | W   | 10.7 | 10.7 |     | FC | CW | S T   |
| 44 | 900828 | NORTHSIDE, SK           | CN 02 | W   | 11.0 | 11.0 | 060 | CR | CW | S T M |
| 45 | 900828 | NORTHSIDE, SK           | CN 01 | W   | 12.2 | 12.1 | 060 | CR | CW | S T M |
| 46 | 900828 | PETERSFIELD, MB         | CN 01 | W   | 07.8 | 07.6 |     | FC | CC | S T   |
| 47 | 900829 | NIVERVILLE, MB          | CN 01 | W   | 18.9 | 18.9 |     | FC | CC | S T   |
| 48 | 900831 | ALVENA, SK              | CN 01 | W   | 03.3 | 03.3 | 122 | CR |    |       |
| 49 | 900831 | ALVENA, SK              | CN 02 | W   | 03.3 | 03.3 | 122 | CR |    |       |
| 50 | 900831 | ALVENA, SK              | CN 03 | W   | 03.3 | 03.3 | 122 | CR |    |       |
| 51 | 900831 | ALVENA, SK              | CN 04 | W   | 03.3 | 03.3 | 122 | CR |    |       |
| 52 | 900899 | MEATH PARK, SK          | CN 01 | W   | 09.5 | 09.2 | 048 | CR | CC |       |
| 53 | 900899 | TURTLE LAKE, ND         | US 01 | U G |      |      |     | BC |    |       |
| 54 | 900899 | TURTLE LAKE, ND         | US 02 | U G |      |      |     | BC |    |       |

|    |        |                       |       |     |      |      |     |  |    |       |
|----|--------|-----------------------|-------|-----|------|------|-----|--|----|-------|
| 55 | 900899 | TURTLE LAKE,ND        | US 03 | U G |      |      |     |  | BC |       |
| 56 | 900899 | TURTLE LAKE,ND        | US 04 | U G |      |      |     |  | BC |       |
| 57 | 900899 | BRUNKHILD,MB          | CN 01 |     |      |      |     |  | FC |       |
| 58 | 900899 | N. D. -DES-LOURDES,MB | CN 01 |     |      |      |     |  |    |       |
| 59 | 900899 | NAPLES,FL             | US 01 | G   | 03.0 | 03.0 |     |  | FC |       |
| 60 | 900901 | WILLIAMS LAKE,BC      | CN 01 | U R | 09.1 | 09.1 | 015 |  | DP | S T M |
| 61 | 900901 | ST. NORBERT,MB        | CN 01 | W   | 12.2 | 11.9 |     |  | FC |       |
| 62 | 900906 | LOCKPORT,MB           | CN 01 | W   | 04.6 | 04.6 | 060 |  | BF | S T M |
| 63 | 900914 | OSCEOLA,MO            | US 01 | A   | 09.1 | 09.1 |     |  | FC |       |
| 64 | 900914 | ODESSA,MO             | US 01 | A   | 38.1 | 38.1 |     |  | FC | S T M |
| 65 | 900914 | ODESSA,MO             | US 02 | A   | 09.1 | 09.1 |     |  | FC | S T M |
| 66 | 900915 | OSKALOOSA,KS          | US 01 | G   | 18.3 | 18.3 |     |  | FC |       |
| 67 | 900915 | OSKALOOSA,KS          | US 02 | G   | 18.3 | 18.3 |     |  | FC |       |
| 68 | 900915 | OSKALOOSA,KS          | US 03 | G   |      |      |     |  | FC |       |
| 69 | 900923 | TWEEDSMUIR,SK         | CN 01 |     |      |      |     |  |    |       |
| 70 | 900999 | TOPEKA,KS             | US 01 |     |      |      |     |  |    |       |
| 71 | 900999 | ST-EUGENE,PQ          | CN 01 | G   | 09.1 | 09.1 |     |  | BC |       |
| 72 | 900999 | STE. AGATHE,MB        | CN 01 | W   | 45.7 | 45.7 | 030 |  | CR |       |
| 73 | 900999 | CUCAMONGA,CA          | US 01 | G   |      |      |     |  | FR |       |
| 74 | 900999 | MACON,IL              | US 01 |     |      |      |     |  |    |       |
| 75 | 901011 | RANDOLPH COUNTY,NC    | US 01 | G   | 09.1 | 09.1 | 030 |  | VM | S T   |
| 76 | 901016 | DAWSON CREEK,BC       | CN 01 | G   | 09.4 | 09.4 | 015 |  | FR |       |
| 77 | 901016 | MILAN,IL              | US 01 | C   | 14.2 | 14.2 |     |  | FC | CW    |
| 78 | 901021 | BARADA,NE             | US 01 | F   | 05.5 | 05.5 | 043 |  | BR | S T   |
| 79 | 901021 | BARADA,NE             | US 02 | F   | 05.5 | 05.5 | 043 |  | BR | S T   |
| 80 | 901021 | BARADA,NE             | US 03 | F   | 03.6 | 03.6 | 043 |  | BR | S T   |
| 81 | 901099 | ASHBORO,NC            | US 01 | G   |      |      |     |  |    |       |
| 82 | 901099 | ASHBORO,NC            | US 02 | G   |      |      |     |  |    |       |
| 83 | 901099 | ASHBORO,NC            | US 03 | G   |      |      |     |  |    |       |
| 84 | 901099 | CHARLOTTE,NC          | US 01 | G   | 05.4 | 05.4 |     |  |    |       |
| 85 | 901099 | VALE,NC               | US 01 | G   |      |      |     |  | VM |       |
| 86 | 901099 | NINGA,MB              | CN 01 | G   | 03.5 | 03.5 | 100 |  | VM |       |

Annotated Listing of 1990 UGM Cases

1. 900308 Mars, PA                    Nine unusual markings were found in a grassy field. The oval "burns" were approximately 2.4 m in diameter, and were aligned in a row. Around the edges of each "circle" was a ring of depressed grass about 18 cm in width. A pink, glowing light was seen hovering in the area prior to the rings' discovery. Source: Stan Gordon, PASU.
2. 900517 Finleyville, PA            Two concentric rings surrounding a bare circle were found in a grassy field. The rings were not evident two days prior to discovery. There were no tracks leading in or out of the area. The outer ring was 16.5 m in diameter, the middle ring was 12.1 m, and the inner circle was 1.8 m. The outer ring was 60 cm in width and the middle ring was 123 cm. Source: Stan Gordon (PASU)
3. 900627 Warsaw, IN                Ten circles were found on a subdivision lot by a man who was picking raspberries. The circles were ignored until early October when reports of other circles in the region were publicized. The circles ranged in diameter from 1.7 to 3.3 m, and were in a field of metre-high grass and shrubs. All had an even, counterclockwise spiral pattern. Source: Lucius Farish
4. 900699 Belgrade, MO              A hole was found in a field. There was a "small crater with three holes in it". No other details available. Source: Grant Cameron
5. 900699 Milan, IL                 A crop circle was found. No other information. Source: Grant Cameron.
6. 900708 Bird's Hill, MB            An unusual hole and effects were found in a field as farmers were baling hay. RCMP and UFOROM investigated. The hole was thought to have been caused by a lightning strike. Source: UFOROM

7. 900799 Williston, ND Six "burned circles" were found in the extreme western part of North Dakota. Ranchers brought the markings to the attention of researchers in August, 1990. The circles ranged in size from 6 to 24 m in diameter. UFOs had been seen in the area during the time the circles were thought to have been created. Source: John Salter
8. 900806 Huron, SD Four strange circles of darkened or "burned" grass were found over a period of a few weeks. They ranged from 3.6 to 6.7 m in diameter. Source: Grant Cameron and MUFON
9. 900807 Leola, SD A marking in the shape of a "backwards question mark" was found in a wheat field by a grain elevator worker who observed it from the top of the bin. There were three rectangular marks spaced around the main pattern. The entire affected area was 18.3 by 12.2 m in dimension. Source: MUFON and UFOROM
10. 900810 Alvord Desert, OR An immense "pictograph" of a "sriyantra" [mantra] was found ploughed into a dry lake bed. It was discovered by pilots of the Idaho National Guard. The marking was over 400 m in diameter and contained over nearly 25 km of precisely-formed curves. An artist has claimed responsibility. Source: various
11. 900818 Tweedsmuir, SK A flattened circle with a concentric ring was found in a wheat field, swirled clockwise. The central circle was 3.6 m in diameter, surrounded by a ring of standing grain, then the ring of crushed grain that was 7.6 m in diameter and 60 cm in width. Source: Grant Cameron and Chad Deetkin.
12. 900818 St. Francois Xavier, MB A circle of flattened grain was found, swirled counterclockwise. Its diameter was 18 m, and was only about the same distance away from a Provincial Highway. The circle was found when a farmer began a swathing pass. There were no signs of entry into the field. Source: UFOROM
13. 900822 Rosser, MB A circle of flattened grain was found, swirled counterclockwise. Its diameter was 21 m, and was about 30 m away from the nearest access road. There were no signs of entry into the field. Source: UFOROM

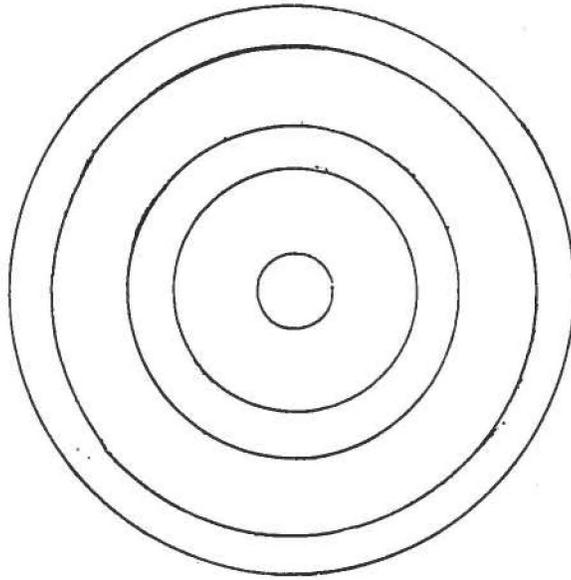
14. 900825 Chicora, PA A flattened circle was found in an oat field. Ill-defined but overlapping rings were found as well. All appeared swirled in a clockwise direction. The main circle was 10 m in diameter; the rings were slightly elliptical: one had axes of 10.4 and 10 m, and the other had axes of 9.8 and 9.7 m. Their widths were 5 cm. Source: Stan Gordon, PASU
15. 900826 Petersfield, MB A farmer and his son found a flattened circle while preparing to swath. The circle is slightly elliptical, with axes 7.8 and 7.6 m. It is located well away from the nearest access road; no signs of entry into the field were found. Source: UFOROM
16. 900827 Domain, MB A circular swirled pattern was found in a wheat field. Its diameter was 10.7 m, and was located near an access road. The grain appeared "woven" in a clockwise direction. Source: UFOROM
17. 900828 Northside, SK A flattened circle with two concentric rings was found, with a trail leading to two additional small flattened areas. Four "spokes" radiated from the center of the main circle. A second circle was nearby, about 125 m away behind a bluff of trees. The larger formation was elliptical, with axes 12.2 and 12.1 m, while the other was circular and 11 m in diameter. Source: UFOROM, media and Chad Deetkin
18. 900828 Petersfield, MB A slightly elliptical swirled impression was found in a wheat field, swirled counterclockwise. Its axes were 7.8 and 7.6 m. The farmers who discovered the "circle" were adamant that there were no tracks leading into the area. Source: UFOROM
19. 900829 Niverville, MB Although not there the previous evening, a crop circle was found in a wheat field. Its diameter was 18.9 m, and was swirled counterclockwise. A slight depression was visible in the center. Source: UFOROM
20. 900831 Alvena, SK A ring of flattened grain was found, surrounding a small tuft of standing wheat. The entire diameter was only 3.3 m, and the width of the ring was 122 cm. In the surrounding fields, three more similar rings were found. Source: Media and Chad Deetkin

21. 900899 Meath Park, SK A concentric ring and circle formation was found. The inner circle was 5.9 m in diameter; the ring had axes 9.5 and 9.2 m and was 48 cm in width. Source: Media and Chad Deetkin
22. 900899 Turtle Lake, ND Ranchers had seen bright lights in a field, then discovered some "burned circles" a few days later. Source: John Salter
23. 900899 Brunkhild, MB A circle of flattened wheat was said to have been discovered near this town. Source: Don Johnson
24. 900899 Notre-Dame-des-Lourdes, MB It was claimed that a crop circle was discovered near this town. Source: CBWFT-TV
25. 900899 Naples, FL A man reported finding a flattened circle in tall grass "in the Everglades, not too far out of town". The circle was about 3 m in diameter, and formed in metre-high weeds in a dried-up lake bed. Source: Grant Cameron
26. 900901 Williams Lake, BC A strange depressed ring appeared on a gravel driveway. It was 9.1 m in diameter, and 15 cm wide. The gravel in the affected area was pressed about 5 cm into the ground, and seemed "pulverized" at some points. That same night, a strange glowing light was seen nearby. Other effects reported. Source: Michael Strainic
27. 900901 St. Norbert, MB A circular marking was found in a field of swathed wheat. It was 4.6 m in diameter, and the wheat seemed to have been "shredded". After some investigation, a farmhand admitted his hoax. Source: UFOFORUM
28. 900906 Lockport, MB A patch of stunted growth, 3.3 m in diameter, was found surrounded by a ring of flattened grain about 60 cm wide. Source: UFOFORUM
29. 900914 Osceola, MO A crop circle about 9 metres in diameter was found in a sorghum field. Source: MUFON
30. 900914 Odessa, MO Two large, generally-circular formations were found in a sorghum field near Kansas City. The larger was 38 m in diameter, and the smaller was about 9 m in diameter. The formations "grew" projections into the surrounding crop over a period of a few days. Source: MUFON

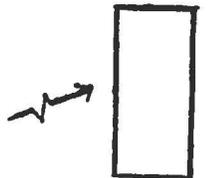
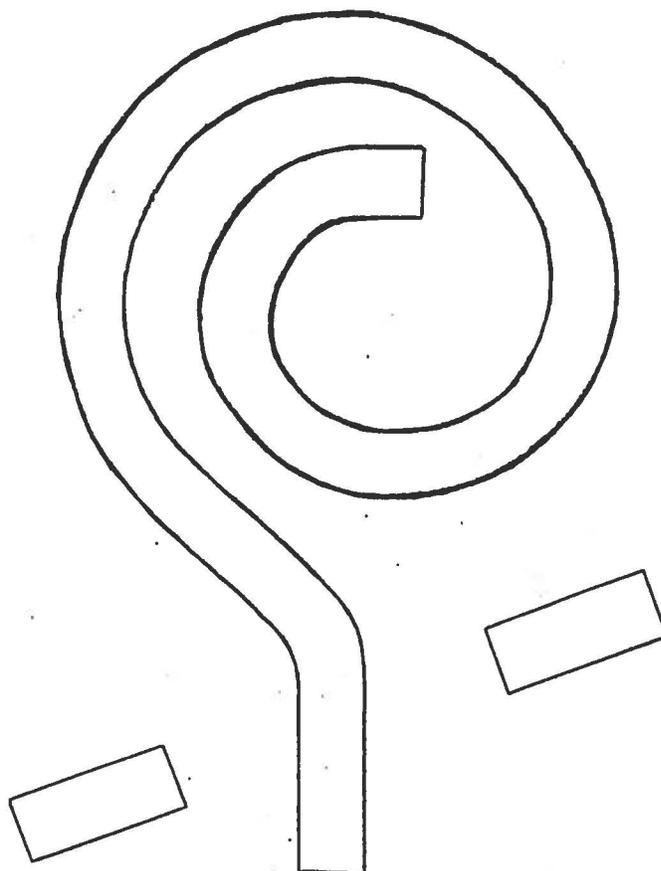
31. 900915 Oskaloosa, KS Three circles were found in a grassy field. Two were 18.3 m in diameter, while the third was somewhat smaller. Source: MUFON
32. 900923 Tweedsmuir, SK Another crop circle was found near this town. Source: media
33. 900999 Topeka, KS One crop circle was found. Source: MUFON
34. 900999 St-Eugene, PQ A cottager found a "burnt circle" near his cabin. It was about 9 m in diameter, and was in grass. It was claimed that a similar ring had been found there last year. Source: CBWFT-TV
35. 900999 Ste. Agathe, MB A pair of concentric rings was found. They were narrow, circular tracks, about 30 cm in width, somehow cut into the field. The smaller was 27 m in diameter, and the outer ring was 46 m. Source: CBWFT-TV
36. 900999 Cucamonga, CA A woman reported that there was a half-circle in her front lawn, "pressed down". Source: Grant Cameron
37. 900999 Macon, IL It was reported that crop circles were found in fields near this town. Source: Grant Cameron
38. 901011 Randolph County, NC A large ring was found in a grassy field during the same time that a loud noise and bright lights were reported by residents of the region. The ring is about 9 m in diameter and about 30 cm wide. Source: Lucius Farish
39. 901016 Dawson Creek, BC A ring of flattened grass was found in a field. Its diameter was 9.4 m and its width was 15 cm. Source: Michael Strainic
40. 901016 Milan, IL A circular area of flattened corn was found, with a diameter of 14.2 m. The ground was flat, "as if the furrows had been pressed out". The corn was laid in a clockwise direction. Source: UFOROM and Edith Ashley
41. 901021 Barada, NB Two rings were found on the side of a hill; a third was found a few days later. The first two were 5.5 m in diameter, and the other was 3.6 m. All were about 45 cm in width. The rings are "burnt brown" in an otherwise healthy crop. "Violet root rot" was suggested as the cause. Source: Lucius Farish

42. 901099 Ashboro,NC Three UGMs were found. No other information available. Source: MUFON
43. 901099 Charlotte,NC A circle with a diameter of about 5.5 m was discovered. Source: MUFON
44. 901099 Vale,NC A "fungus ring" was found. Source: MUFON
45. 901099 Ninga,MB A "completely bald patch" was found at the top of a grassy knoll. It was in the shape of a ring, and was 3.5 m in diameter with normal grass in the center. Source: Jeff Harland and Miles Phillips.

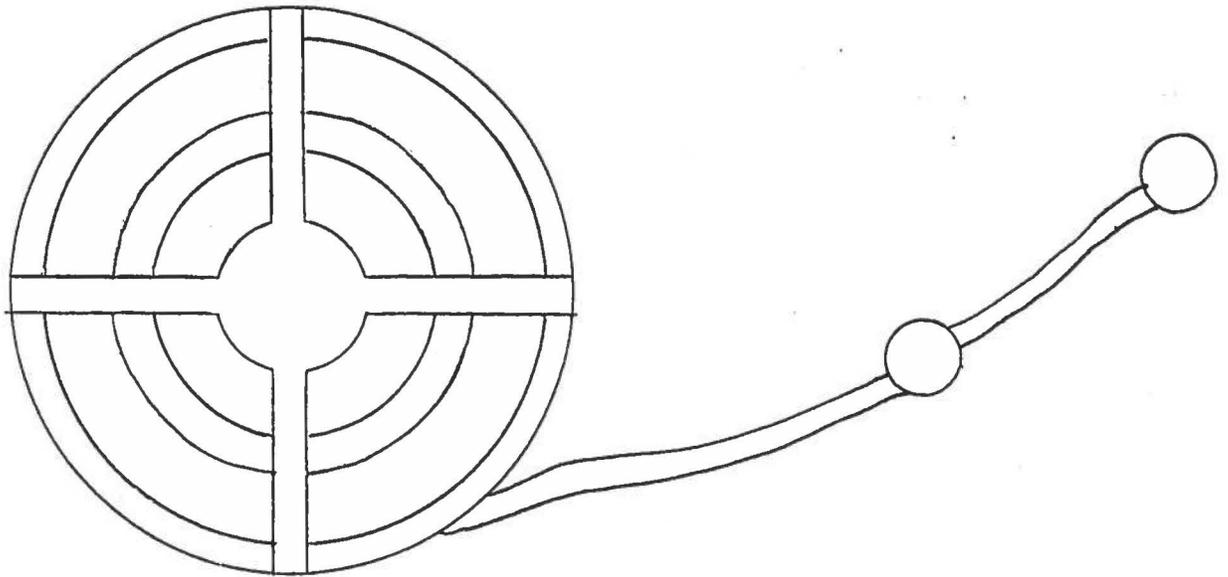
Case 2: Finleyville, Pa.



Case 9: Leola, S.Dak.



Case 17: Northside, Sask..



Case 14: Chicora, Pa.

