

# THE SPECTRUM OF UFO RESEARCH



**J. Allen Hynek Center for UFO Studies  
Chicago  
1988**



# **THE SPECTRUM OF UFO RESEARCH**

The Proceedings of the Second CUFOS Conference, held  
September 25-27, 1981, in Chicago, Illinois.

**Mimi Hynek, Editor**

**J. Allen Hynek Center for UFO Studies  
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**This volume is dedicated to  
J. Allen Hynek (1910 – 1986).**

**In honor of his contribution to  
ufology and the Center for UFO Studies,  
the Center was renamed  
the J. Allen Hynek Center for UFO Studies.**



## FOREWORD

This long-delayed volume of papers given at the 1981 Chicago conference of the Center for UFO Studies has finally entered the public domain. Despite the lapse of time, these papers make several original contributions to the study of the UFO phenomenon, and I consider this volume to be a worthy successor to the 1976 CUFOS Conference Proceedings. Together, these papers summarize our understanding of several key aspects of the UFO phenomenon as of 1981.

The order of the papers follows the order in which they were presented. A few papers were not presented (e.g., Ballester/Guasp, Basterfield, Holt and Jeffers) and are placed after the others. An important addition to this volume is a transcription of the discussion that followed most presentations. The questions and answers often raise important matters only briefly discussed in the paper and thus make a significant contribution to the proceedings.

I do not wish to slight any authors, but I should mention several papers that make exceptional contributions to ufology. The paper by Maccabee is a definitive treatment of the famous McMinville UFO photos and delineates the errors of the skeptics without making extravagant claims for the validity of the photos. The two papers by Hopkins and Lawson are complementary; they set out the case for and against the reality of the abduction experience. Johnson's and Rodeghier's papers on UFO events with vehicle interference represent the "state of the art" in our knowledge of the subject. Finally Gordon Melton's historical survey of contactees and other fantastic voyagers advances our understanding of the relation between this social phenomenon and the UFO phenomenon itself.

The first paper in this collection is the last scientific paper to be published by Allen Hynek (in collaboration with Howard Schechter). That alone makes it special, but its topic is also unique, an acoustic analysis of a recorded sound from a UFO. Allen's approach to science and the UFO subject--open, simple, and direct--and his ability to develop marvelous analogies for scientific processes are all on display in this article.

Though not included in this collection, several people gave workshops at the conference that helped make it a success. Ron Westrum discussed the sociology of UFO sightings, David Jacobs presented his historical analysis of the UFO phenomenon, Barbara Schutte conducted a forum for UFO investigators and Bertil Kuhlmann discussed the Swedish computer Project URD and made a plea for national organizations to cooperate on an international basis.

This volume has been edited and shepherded to existence through the dedicated efforts of Mimi Hynek. CUFOS expresses its sincere gratitude to Mimi for taking on a thankless task and completing it during some very trying times. And I wish to add my own personal congratulations to her on a job well done. Without your efforts, Mimi, there would be no proceedings from the 1981 conference, and I would still be feeling some guilt at the long delay. Instead I can point proudly to this volume as evidence that serious research is being conducted on the UFO phenomenon, and I can sleep well at night. May our readers enjoy the volume as much as we enjoyed sending it to the printer.

Mark Rodeghier, Conference Chairman  
Chicago, Illinois

## ABSTRACTS OF PAPERS

### NARROW-BAND ACOUSTIC ANALYSIS OF A RECORDED UFO SOUND

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J. Allen Hynek and Howard R. Schechter

The recorded sound ascribed to the St. Helens, Oregon UFO is analyzed and found to have unique properties: the absence of even harmonics and of any frequency higher than 3000 Hertz. While such acoustic composition can be produced artificially by, say, an electronic synthesizer, it appears to have no easily identifiable natural origin. Thus, even apart from possible UFO connection, the sound is of considerable scientific interest

### THE MCMINNVILLE PHOTOS

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Bruce Maccabee

On June 8, 1950 the local newspaper in McMinville, Oregon published two photos of a "flying saucer" which had been taken by Mr. and Mrs. Paul Trent, along with a brief report on when and how the photos had been taken. The story was circulated nationally by the International News Service, which also obtained the original negatives but did not return them to the Trents. The photos received national attention when the Colorado investigators analyzed them. The conclusion presented in the "Condon Report" was that the evidence was essentially consistent with the claim that "an extraordinary flying object...flew within sight of two witnesses."

Later investigation indicated that the evidence referred to in the Report was not conclusive and that there seemed to be some discrepancies between the photographic evidence and the witnesses' story. A subsequent investigation of the original negatives reconfirmed Hartmann's conclusion about excessive brightness of the bottom of the image of the unidentified object (UO) and eliminated the claim that there was a relatively long time lapse between the photos. Computer-aided analysis by GSW revealed no indication of a suspending device and did suggest a possibly excessive edge distortion which could be attributable to atmospheric distortion if the object were far away, as suggested by the photometric analysis.

I have carried out an extensive investigation into the background of the sighting since 1974 and have concluded from communication with people who have met the Trents that they could not perpetrate a hoax like this. I have concluded also that it cannot be shown from either verbal or photographic evidence that the case was a hoax. When considered along with other evidence that strongly suggest that unusual objects have been seen by many technically trained, credible observers (see, for example, Project Blue Book Special Report #14), the Trent case is especially valuable because of the clarity of the photos.

### MEDICAL INJURIES RESULTING FROM A UFO ENCOUNTER (CASH/LANDRUM CASE)

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John F. Schuessler

On 29 December 1980, Betty Cash, Vickie Landrum and Vickie's grandson Colby Landrum were enroute to Dayton, Texas from New Caney, Texas when they encountered an extremely bright UFO hovering over the highway at tree-top level, at 9 pm on a cool evening with high

broken clouds in the sky. The object was moving up and down, periodically belching flames groundward, causing the threesome to stop their car in fear of being burned by the flames. Betty, the driver, stood in her doorway for a time and then walked to the front of the car, giving her a 7-10 minute exposure to the object. Vickie stood in the doorway for 3-5 minutes and then re-entered the car to calm the very frightened boy. As the object rose to the southwest, helicopters rushed in and flew around and behind the object. A total of 23 helicopters were counted, many of them later identified as CH-47 Chinooks manufactured by the Boeing Co.

All three witnesses suffered physical injuries: vision problems, headaches, stomach pains, diarrhea and reddening of the skin. Betty and Vickie lost a significant amount of hair and sustained blisters on various parts of their bodies. Betty's injuries appeared worse than the others, corresponding to her long exposure time.

Two significant points emerge from this case: 1) recipients of medical injuries resulting from UFO exposure/contact are not quickly and properly treated, since doctors don't know what to look for and how to treat the resulting injuries, and recipients are usually frightened by the incident and afraid of ridicule from doctors and others if they relate their experience truthfully, and 2) military activities such as the helicopter operations add a confusion factor, when in fact, knowledge of the operations could be most beneficial in identifying a mode of treatment for the victims. In addition, well-meaning UFO investigators and media people rush in to get a story and try to fit the incident into some predetermined military strategy.

This paper will summarize the facts of the case, clearly show the extent of the medical injuries, enumerate the problems associated with tracking down military helicopters and airplanes, and recommend a plan of action for the future.

#### A TOUCHSTONE FOR FALLACIOUS ABDUCTIONS: BIRTH TRAUMA IMAGERY IN CE III NARRATIVES

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Alvin H. Lawson

The imagery and events in UFO abduction reports resemble those in several psychological processes, but they are especially similar to revived birth trauma (BT) narratives. The incidence, universality, and idiosyncratic quality of BT events suggest a likely psychological (i.e., non-exotic) source for alleged abduction experiences. These qualities also help explain the many parallels and the minor differences in CE-III reports from witnesses in diverse as well as comparable cultures.

Extensive abduction/BT parallels are presented, taken from abductees' and revivification subjects' narratives, and include: 1) highly specific details of the abduction sequence; 2) types of entities described; 3) emphasis on the fetal qualities of humanoid, the most common entity type reported; 4) possible archetypal forms from prenatal cellular stages such as the UFO-shaped embryonic disc; 5) possible archetypes implying the following relationships: placenta/UFO, umbilical cord/levitating light beam, fetus/abductee, etc.; and 6) a study of cesarean imaginary abductees whose avoidance of tube/tunnel and door imagery is statistically significant.

A prominent abduction case (Betty Andreasson's) is analyzed for BT imagery and events, and the study finds pervasive evidence for concluding that the Andreasson experience was essentially a BT revivification.

The main points of this paper are: 1) BT data relate to a witness's perinatal history and psychology rather than to UFO events, and so their presence invalidates any

CE-III narrative in part or whole; 2) BT elements therefore provide a criterion which can help determine false abduction reports from any that may reflect actual events; and 3) the BT hypothesis is testable through such means of researching abductees' birth histories as family interviews, scrutiny of narratives, and hypnotic regression.

Multiple witness abductions cannot yet be dismissed, but probably relate to multiple hallucinations, while physical effects CE-IIIs remain ambiguous. Ufologists are urged to approach abduction cases not as exotic events but as genuine psychological phenomena, in order to make fundable CE-III studies more feasible.

## THE CONTACTEES: A SURVEY

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J. Gordon Melton

The term "contactee" designates a person who claims direct contact with extraterrestrials and has derived from that contact, usually in the form of a direct "message" from the contacted entity, some information on the workings of the universe, usually of some metaphysical nature. This survey is limited to published accounts and organized on a basis of the date of publication of the accounts rather than on the date of any claimed contact.

Some 110 separate claims to extraterrestrial contact have been located. Those published in the 1950s were the first to draw significant public attention to such claims by offering the information from the space brothers as the "solution" to the flying saucer controversy. These accounts provide both a basic reference point for defining the "contactee" and a standard by which other accounts can be judged.

The 1950s contactees talk to space people who travel to earth in space ships and they frequently are allowed to enter the ships and even travel into outer space. Contact invariably involves some form of psychic activity, usually telepathy (thus solving the language problem) or psychokinesis, but astral travel and dematerialization also figure prominently in some accounts. Eventually most of the early contactees either formed or joined psychic-religious groups.

While the contactees of the 1950s were the first to attract widespread public attention to extraterrestrial contact claims, they were by no means the first to make such claims. Some twenty claims over the two centuries before Adamski are very similar to the accounts of the 1950s, with a few exceptions. Contact is confined to Mars, Venus and the moon. All interplanetary travel is by either astral travel or some form of teleportation. No space ships appear. A ready model for the earlier contactee accounts appears in the fantastic voyage novels so popular in the eighteenth and nineteenth centuries. A natural flow and development can be seen between the fantastic voyage, the contactee claims, the underground world explorations, the early science fiction novels, and the modern contactee literature.

In the 1960s and 70s the story form continued to grow and change under the pressure of the space exploration program and the growing popular knowledge of the solar system. Contactees established their contacts outside the solar system. Many built substantial groups of devotees and publish a steady stream of occult literature. Through routinizing their contact with the space brothers they have spawned even more contacts.

The contactees have shown themselves to be part of the broader occult religious community out of which they came in the nineteenth century and in which they continued to exist during and after the Adamski era. While showing some differences with accounts studied in the 1970s as "close encounters of the third kind" or the "abduction" cases, these claims form at least one body of material against which such accounts can be compared.

## EVIDENCE FOR UFOs IN THE ITALIAN PAST

Roberto Pinotti

Unusual aerial phenomena in Italy have been reported as far back as Roman times in sources that still exist, such as the *Prodigiorum Liber* (The Book of Prodigies), an anthology of anomalies by Julius Obsequens. Pliny the Elder tried to classify aerial phenomena in his *Naturalis Historia*, mentioning flying torches, lamps, fireballs and beams of fire. I quote an incident from LaVita, Benvenuto Cellini's autobiography. In another example, Father Alberto Guglielmotti, official historian of the papal navy, gives an account of a huge, flaming, shining pillar of fire that was seen during the famous and decisive battle of Lepanto, in which ships of the Christian league destroyed the Turkish fleet. Another anomalous event is depicted in the painting "Il Miracolo delle Neve" (The Miraculous Snowfall), showing a white substance falling from strage, elongated "clouds." A more striking object is depicted in a painting of the Madonna and Child and the Infant St. John. In an upper corner there is an egg-shaped, lead-colored flying object in the sky, apparently in motion, and it is being watched by a shepherd whose dog is barking at it.

In more recent times Italian ufologists have noted four UFO "waves" since World War II--in 1950, 1954, 1973, and 1978. The 1954 wave was distinguished by 29 incidents of a discharge of a strange white substance (often referred to as "angels' hair"). One incident was seen by hundreds of witnesses who were watching a soccer game in Florence, and I still remember seeing the roofs of Florence whitened by the substance. The chemical analysis performed at the University of Florence showed it to be "a combination of boron, silicon, calcium and magnesium." Because of translation problems most of these documented UFO events are still unknown outside of Italy.

## SIZE, DISTANCE, AND DURATION PARAMETERS OF THE IGNITION-INTERFERENCE EFFECT

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Donald A. Johnson

Seventy-eight cases involving motor vehicle electrical system interference in the presence of a UFO were selected from the UFO literature for completeness of size, distance and duration information. Base-2 logarithms were computed for the apparent size, distance and duration estimates to normalize their distributions. The logs of these variables were then used in a discriminant function analysis to determine the predictability of the intensity of the electromagnetic interference effect. The cases were categorized into two groups: those where the intensity of the ignition interference was not sufficient to bring the vehicle to a complete stop (N=15); and those where the vehicle was forced to a complete stop (N=63).

The three variables were found to be significant predictors of intensity of effect: duration ( $p < .0005$ ) entering the equation first, size ( $p < .0009$ ) and distance ( $p < .0013$ ) third, using reduction in Wilks' lambda as the selection criteria. The resulting discriminant function was able to correctly classify 86% of the cases. Position of UFO was included in the analysis as a trichotomous variable but did not reach significance due in part to its high correlation with size and distance.

In order to aid interpretation of these results, a hierarchical cluster analysis was performed on the cases, using Euclidean distances among the same three logarithmic variables to determine clustering. Seven clusters were revealed. The incomplete ignition interference cases were found predominantly in two clusters; both representing encounters with small objects with brief duration. One cluster in which all encounters resulted in stalled vehicles identified cases of high strangeness (occupant and contact reports). Other statistical differences between the clusters were found.

## A SUMMARY OF VEHICLE INTERFERENCE REPORTS AND A DESCRIPTION OF A POSSIBLE NATURAL PHENOMENON CAUSING SOME EVENTS

153

Mark Rodeghier

An analysis of 441 cases in which UFOs were sighted and nearby vehicles were affected was undertaken to determine possible statistical patterns. Basic characteristics of vehicle interference events are discussed, including information about witness involvement and the phenomenon's frequency of occurrence. Chi-square analysis was attempted on selected characteristics of the events, leading to unexpected results. In particular, a grouping (nexus) of several events having the common characteristic of small UFO size, movement in a straight trajectory and appearance as a light was located (significant at better than the  $p = .02$  level). Some reasons are given to consider these cases as involving the operation of a natural phenomenon of unknown origin.

## INVESTIGATING ABDUCTION CASES

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Budd Hopkins

Part I of this paper deals with the reasons for resistance to abduction reports, and focuses attention on which problems must be investigated. The second section relates the first abduction case I investigated, a Kent, Connecticut case involving seven probable abductees and five additional witnesses; I concentrate upon the clues which persuaded me that an abduction had occurred. The third section elucidates the criteria I use to determine whether or not a case should be investigated. The final part of this paper concerns a central ethical issue raised by the use of hypnosis -- the contrast between an investigator's curiosity and the subject's rights.

## STANDARDS IN THE EVALUATION OF UFO REPORTS

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Vicente-Juan Ballester Olmos and Miguel Guasp

Three major dimensions of a UFO report, i.e., the Information Quality Index (Q), the Strangeness Index ( $\Sigma$ ), and the Reliability Index ( $\pi$ ), are defined and quantified. Mathematical assessments of those report coordinates are developed as dependent of objective measures, to attain a standard status for the general adoption by the community of UFO data analysts. An algorithm linking the three parameters is proposed to show the Certainty Index ( $\Delta$ ) of one case or catalogue of cases.

## CAN IMAGERY EXPLAIN CERTAIN UFO CLOSE ENCOUNTERS?

183

Keith Basterfield

This paper presents an hypothesis that certain close encounters with the UFO phenomena may be explainable in terms of imagery similar to that experienced on the sleep/wake interface and known to psychology as hypnopompic and hypnagogic imagery. Cases are presented and a discussion ensues on the similarity of UFO events (including abduction) and imagery.

## UFO MANEUVERS AND RADIATION: A THEORETICAL PERSPECTIVE

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Alan C. Holt

A review of UFO maneuverability and radiation characteristics has been conducted, based on a recently developed theoretical model of space-time and associated fundamental forces. This review concentrates on discerning differences between UFO characteristics which suggest differences in the level and type of technology that would be required to duplicate these characteristics. If some UFOs are visiting spacecraft, such a study could also provide clues to differences in the characteristics of the occupants and their civilizations.

## UFOs AND THE "PSYCHIC CONNECTION," OR ARE WE MISSING THE MESSAGE BY NOT ASKING THE RIGHT QUESTIONS?

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Joan Jeffers

This paper presents the hypothesis that we may be missing important data about UFOs because we are not asking the right questions when witnesses report paranormal aspects of sightings. Psychical research is rejected or ignored by most scientists, and we know little about the ways in which PSI phenomena may operate. Perhaps if we approach the UFO problem through the psychic aspects or witnesses' reports, we may begin to ask some of the right questions and discover whether or not the possible intelligence behind some UFO reports is attempting to convey some information through these aspects.

The initial motivation for this basic study of the psychic connection came from the oft-stated psychic theory presented by various authors. Sprinkle's 1975 paper Psychic Impressions of the UFO Phenomena stirred the curiosity; finally a strange experience in 1975 was the impetus to undertake the preliminary study.

Participants for the survey were selected from the files of the Pennsylvania Center for UFO Research from investigated reports determined to be "unknowns" for the years 1973 through 1975. 120 questionnaires were sent to the witnesses, and remarkably, 45% were completed and returned. A statistical test applied to the collected data indicates a strong possibility that people who believe they have psychic abilities and psychic experiences do also report UFOs significantly more often than do people who do not believe they have these abilities or experiences.

The possible problems with the study are also discussed. The major conclusion is that the questions asked of the witnesses may be some of the right questions, but that further, more controlled studies are necessary. Some recommendations are made for these.

# NARROW-BAND ACOUSTIC ANALYSIS OF A RECORDED UFO SOUND

J. ALLEN HYNEK and HOWARD R. SCHECHTER

In a small percentage of UFO events, witnesses have attributed sounds to the UFOs. Previous analysis of these sounds has been limited. Regan and Allen have surveyed several of these reported sounds in an excellent paper (MUFON Symposium Proceedings, 1979, pp. 179-206) in which two beeping sounds attributed to UFO activity in Bragg Creek, Alberta, Canada were analyzed. More recently, Haines has analyzed the metallic sounds transmitted from the ill-fated plane of Frederick Valentich, the young pilot who vanished with his plane off the southern coast of Australia in 1978 (Journal of UFO Studies, Vol III, CUFOS, 1983, pp.14-23). Valentich reported sighting a very strange object that circled his plane shortly before his transmission ceased, but there were no other witnesses. Neither was a UFO actually seen in the cases that Regan and Allen investigated, though a few nights before the actual recording, similar sounds were reported by several witnesses coming from the reported unknown light.

Very few recordings have been made of UFO sounds and even fewer have been fully analyzed. CUFOS has thus been fortunate in obtaining a recent recording of a sound which, if our informants are correct, is clearly connected with the appearance of a UFO. The tape in our possession, an early generation copy, has been subjected to narrow band acoustical analysis by Howard Schechter, past chairman of the Chicago regional chapter of the Acoustical Society of

America. Mr. Schechter is with us tonight and I shall ask him later to discuss any questions concerning the method of analysis and the interpretation of the results.

Since acoustical analysis is not my field, I am not competent to pass final judgment on the present analysis. As a ufologist, though, I felt that because recordings of UFO sounds are so exceedingly rare, every attempt should be made to analyze this sound track and report the results to my colleagues. This despite the fact that the sound was recorded on a cassette tape recorder from a police car CB radio, a process that must surely introduce some distortions. You may judge some of this by the sound of the voices you can hear on short sections of this tape.

The entire sequence of events surrounding the recording has been described in the International UFO Reporter (May/June, 1981; May/June, 1982 issues), so here I shall limit myself to a synopsis of the events.

On March 17, 1981, Sgt. Russell Yokum, a policeman on patrol in the vicinity of St. Helens, Oregon, saw at about 4 a.m. a bright light on the Washington side of the Columbia River, traveling toward Ridgefield, Washington. Alerting headquarters by radio, he drove to the county courthouse on the bank of the river. He

was joined there by Oregon State Police and citizens, all of whom could see the UFO. Using his car CB radio, Yokum contacted a well-known CB enthusiast in Ridgefield whose "handle" as they say, was "Lucky 13", and asked him to take a look outside his house and confirm their sighting. This he did, reporting that he could see a very, very bright light.

The light then changed colors from white to reddish orange and hovered low over the river. A sound, difficult to describe, but which you shall shortly hear for yourselves, began to emanate from the region of the light. Lucky 13 put his CB microphone outside his window and said "I hope you guys are recording this!" They were, on their standard Sony cassette recorder, the same one they used to introduce evidence in court on occasion. The sound was thus transmitted from Lucky 13's CB to the police CB and then from that speaker into the recorder.

We'll now listen to this tape of the sound and of some of the recorded voices. CB radios are not known for their high-fidelity, but as you will soon see from the analysis shown in the graphs, very little general noise is present. In fact, it is the absence of frequencies other than the two basic clusters of frequencies that is the outstanding characteristic of this UFO sound.

[At this point the recording was played, reproducing what could be described as a whirring sound of medium pitch.]

I will now describe briefly the method of acoustical analysis used by Schechter. He will discuss the purely technical aspects of the work, but I shall try to give you, in my own words, my understanding of the process. I think it is important for ufologists to understand what can and cannot be done in this matter of analyzing sound.

Schechter has described the process to me as a technique that is called, variously, real-time analysis, narrow-band analysis, or time-compression analysis. In each instance the time-varying signal is averaged for a duration as short as one half a second to as long as two minutes. In our case the range was two to five seconds. The instrumentation utilized was a Spectral Dynamics Model SD301C Real Time Analyzer, which is a time-compression unit. It is

capable of spectrum analysis up to 50 KHz, with frequency resolutions of 0.03 Hz. The time-compression technique uses frequency-tuned band-pass filters to convert the input signal from the time domain to the frequency domain. As such, the real-time analyzer provides a display output proportional to the Fourier components of the input signal. In fact, occasionally the technique is called "fast Fourier analysis" although this is a somewhat misleading terminology.

Now, in my own words, let us imagine this mechanical analogy: suppose you have a large collection of marbles of all sorts of sizes, and you roll these marbles down an inclined plane. If you record the size of each marble as it rolls past you (or have some instrument do this for you, of course), then this corresponds to analysis in the time domain.

If now, however, you drill a long series of holes in the board, starting at the top with the smallest and making each successive hole larger as you proceed down the inclined plane, and then roll the marbles down the board, each marble will roll down until it comes to the first hole just large enough for it to pass through and fall to the waiting bin below.

After you've rolled all your marbles (but not lost them!) if you simply count the number of marbles in each bin, that's equivalent to frequency domain analysis. You know now how many marbles there are of each size, that is, their frequency, but you don't know at which particular time each marble dropped into its hole. The time has been averaged out.

You can transform mathematically from one domain to the other, from time to frequency, and that is exactly what has been done with the sounds on this tape. The intensities of each sound (the sizes of the marbles) have been collected and added together for time intervals.

The following figures illustrate the use of time-compression analysis on several sounds. Figure 1, with frequency on the X axis and total intensity on the Y axis, shows the sound of a punch press, from very low, diaphragm-vibrating thuds clear up to 5000 Hertz, and is an example of the type of industrial sound Schechter has been analyzing for many years. Figure 2 shows a sound made up of all sorts of frequencies up to 5 KHz--almost pure noise.

Figure 1

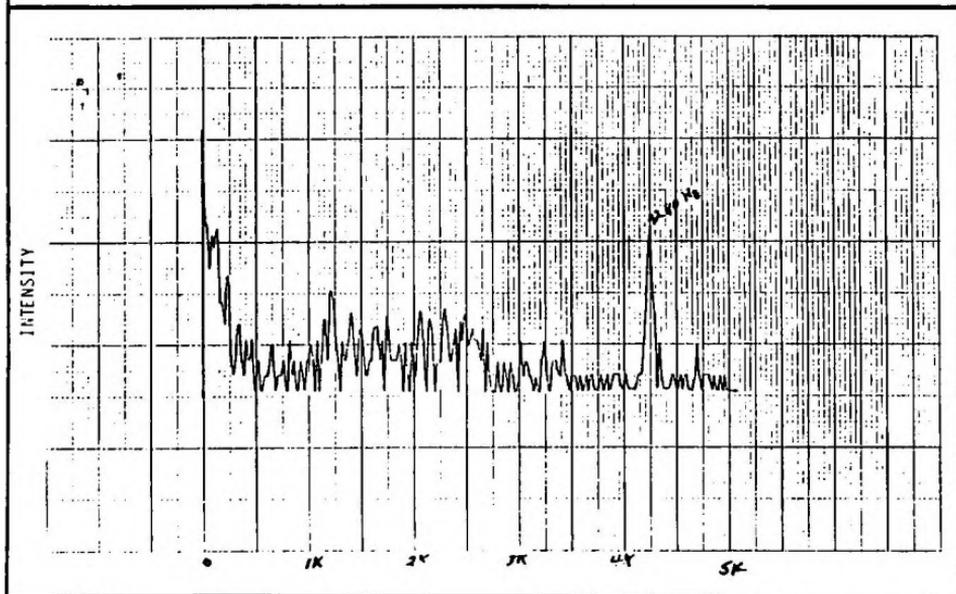
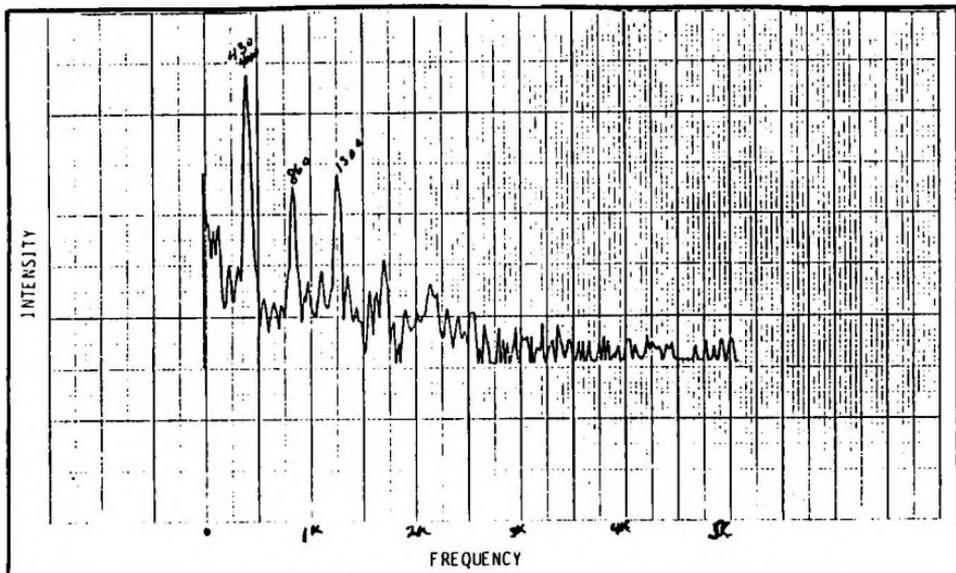


Figure 2

Now we turn to the analysis of the St. Helens sounds. Figure 3 presents the results of time compression analysis of the UFO sound. The frequency distribution is characterized by two sharp clusters, at about 1 and 3 KHz. When I first saw this graph, I was unimpressed, but Schechter pointed out to me that in all his experience he had never seen a frequency domain graph quite like this before. Almost all noises produced in nature or by man have harmonics or lesser peaks throughout the sound spectrum; this has none, not even the typical even harmonics. It is difficult to account for this fact.

Also important is the almost total absence of frequencies above 3000 Hertz; the frequency analyzer that was used records sounds up to 50 KHz. Thus either the CB amplifier couldn't pass any frequencies higher than 3 KHz or the UFO sound didn't contain any such frequencies. Unfortunately the original equipment was not available to us so that controlled laboratory tests could be conducted. Figure 4 shows the analysis of another short portion of the tape recording.

Schechter tells me that even if a UFO had not been seen in connection with this sound, we still have here a very unusual phenomenon by all standards, given the nature of the recording. The sound could not be produced by any bird or conventional musical instrument; these would have many other components or harmonics, as would factory and machine noises. It could, though, be produced by an electronic synthesizer like a Moog, assuming that someone wished to go to that expense and trouble.

So even if a UFO sighting were not involved, the sound, according to Schechter, is unique. But of course there was a UFO seen by many witnesses that coincided with the presence of the sound, so if the St. Helens event is a hoax, it is a very clever one. And if Lucky 13 can be believed, when he placed his microphone outside his window, he recorded a true UFO sound, and we have here an important piece of UFO data, perhaps the first example of the sound recording of a UFO that was simultaneously seen and heard.

And now I'll ask Mr. Schechter to come and answer your questions. After all, he did the analysis; I just provided the tape!

Howard Schechter:

My first acquaintance with UFOs goes back to about 1955 when I got this blue book through the mail. It said appropriately "Project Blue Book" and, of course Dr. Hynek was mentioned in it, and over the years I've been very interested in the phenomenon. I've been doing audio engineering and audio research for about 20 years and work in acoustics for the last 15. In the past ten years my work has taken me across the entire U.S.; I've been involved in community noise research in both residential and relatively rural areas. I've been outside at all times of day and night, because noise is different during the night than it is during the day, requiring analysis under both conditions.

I haven't seen one UFO during the whole time, and it really bothers me--all those years and thousands of late night acoustic observations, and no sightings. I keep looking and wondering "Where are they? Why don't they come out?" I understand from Dr. Hynek that the situation is similar for him; but all this has nothing to do with the particular analysis to be discussed.

The tape of this phenomenon, which was brought to my attention through the Chicago Association of Technical Societies because of my past relationship with the Acoustical Society of America, is indeed unique. It's unique first of all because it's an audio recording that was made by sworn police officers. In my particular work, we do a lot with the police, because noise can be an annoyance, people react to it, and we have a deep respect for the officers of the law. So when I received a tape that was essentially recorded by sworn officers of the law (or at least they were involved in the recording) I had a tendency from my professional experience to accept it as being a true recording.

And now for the recording. I've probably performed in the last ten years, 500, 600, 800--countless acoustic analyses. I've never seen one of an occurrence that took place in a real, open environment that looks anything like this. Now don't get me wrong--the type of spectrum I analyzed could be created artificially, re-created, as Dr. Hynek said. As a matter of fact, for the record, I did, at a laboratory in the maddest area, create the sound to some extent, and performed an acoustic analysis, and the shape and general contour of the spectrum looked very similar to the analysis of the police tape. However, in playing

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M2E RECORDING LABORATORY

MEASURED

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9/2/61

S.D. 3016 RTA

SIM. 300000 CAS.

Edward R. White

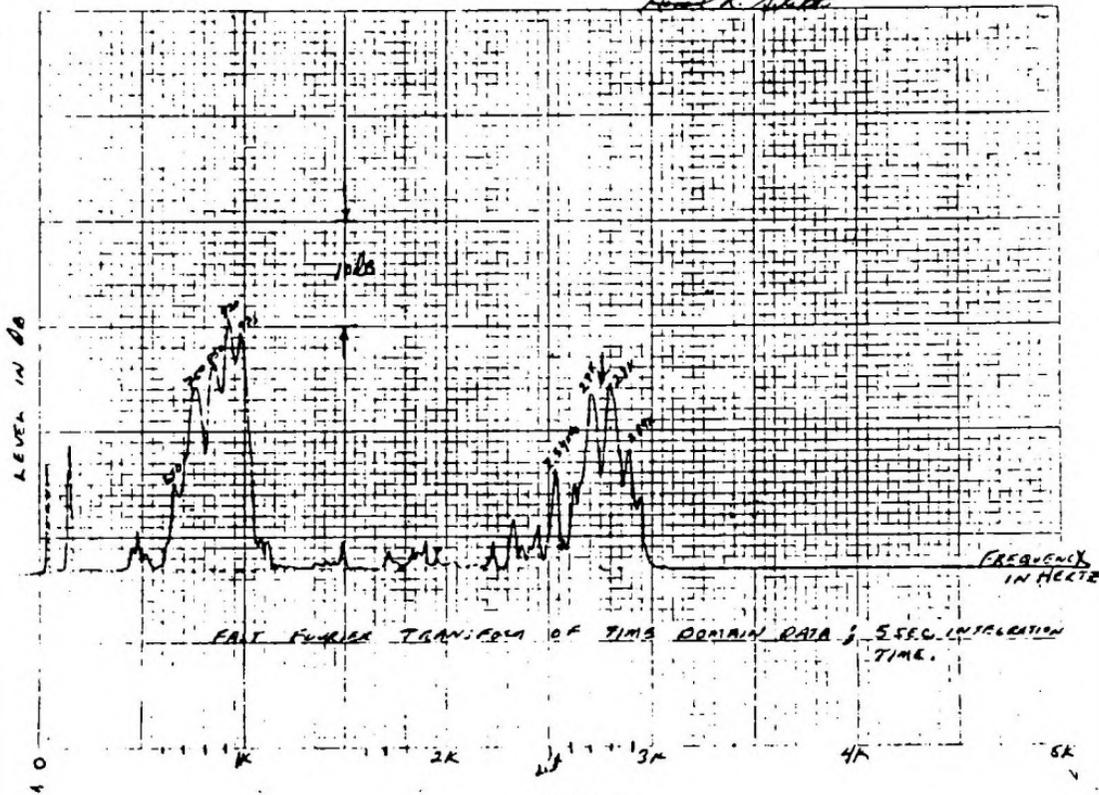


Figure 3

it back, it sounded exactly as it was, which is artificial, as opposed to what Dr. Hynek just played for you, which is the original tape that I analyzed, recorded outdoors.

Now that's the important point. There's a real difference, in acoustic analysis, between laboratory conditions and outdoor conditions. And if this tape is indeed not a hoax, then what we have here is an acoustic phenomenon that was occurring on March 17, 1981 in Oregon that can only be created, or at least the shape of it can only be created artificially indoors. I know of no type of aircraft, no type of jet, no type of helicopter (and I have many narrow-band analyses like these of such objects in operational mode) that looks anything like the spectrum we just saw here.

Now the thing that is interesting about this particular spectrum is, as Dr. Hynek noted, there are no correlations between the lower frequency band of noise and the upper frequency band. If this were the sound of a jet or other aircraft you would be able to see some other harmonics that related. I've taken this tape to a few of my colleagues in the Acoustical Society

and I've run it through a computer that's in the basement of a colleague's home, and we found that the only type of object that could be interacting outdoors, that could be creating this kind of fundamental (what we call these bottom frequencies) is a vibrating plate, and it would have to be an awful lot of vibrating plates going simultaneously to get that amount of energy in the real world.

So what we have here is something that often occurs in acoustic research and acoustic analysis--we have created more questions than we have answered with the analysis. And I think, in the end result, the thing that's going to be most interesting is "Do other people, or have other people heard anything like this type of sound source in their observations of either UFOs or UFOs or any other type of mechanical or vibrational inter-operative mechanisms that have been operating outdoors?" And that's the key point again--this thing was recorded outdoors. So I open the discussion of this paper now to questions that may have been evoked by the presentation.

#### DISCUSSION

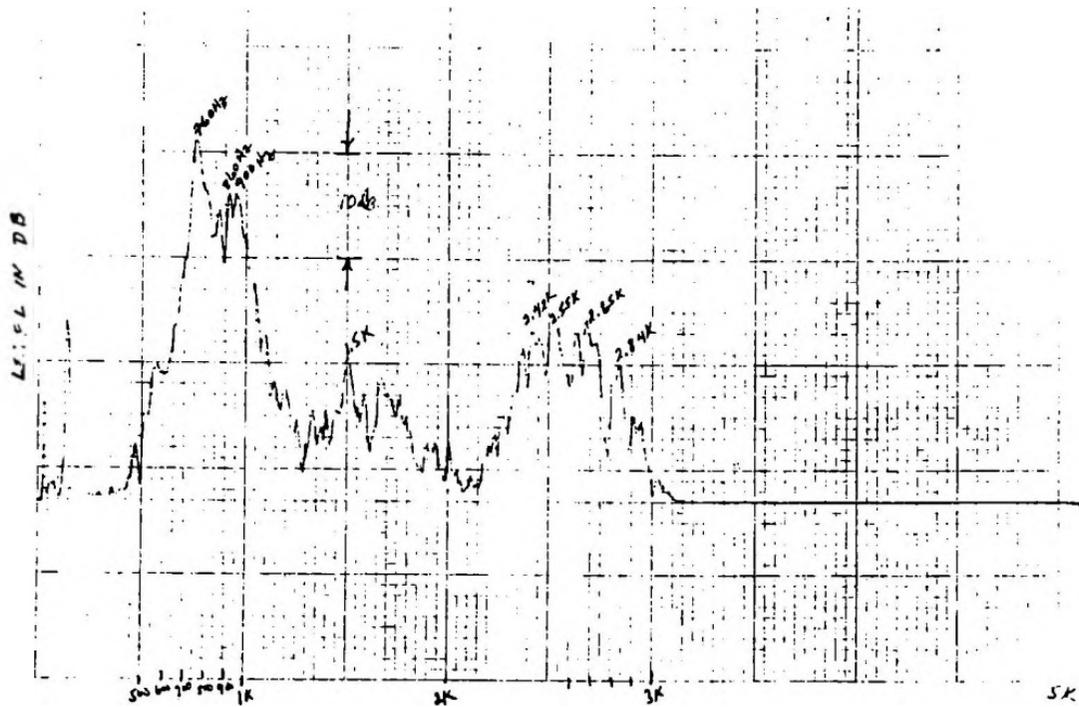
?? Could you clarify the point that this is a first or second-generation recording?  
It seems to me that it's awfully background-noisy.

5. OK. You've got to remember that the way you heard it was from a tape-recorder going through its loudspeaker and then into this microphone and then out of these loudspeakers. The audio system at this point is very degraded. The way I analyzed the tape was the actual cassette as we received it, directly into the analyzer, and it was played back on a professional Sony machine that has a broad-band characteristic that's plus or minus 2 db. from 20-20,000 cycles.

?? Did the officer have his recorder on the seat of his car or back at headquarters?

5. OK. The cassette recorder was sitting underneath the speaker of the CB in the police squad car, and Lucky 13 was broadcasting from about 3-5 miles away, with his key permanently down in the ON position, with the microphone out the window recording the sound of the object. So what we have here for what we would call the audio spectrum train is a source through the air medium, through the microphone, through Lucky 13's CB into radio waves on that frequency band across 3-5 miles into the decoding mechanism, as you may look at it, of the police officers' CB and then into his recorder. It doesn't surprise me that we have a cut-off at 3K, but if there were any higher frequencies I would have at least seen something on the analysis out there, and I didn't see anything.

Figure 4



- ?? There's a phenomenon called an electro-acoustical meteor in which people apparently have their nervous systems stimulated by microwaves or some other electro-magnetic radiation from purely natural meteors. Was this actually a sound or could it have been some sort of electro-magnetic phenomenon stimulating both the CB radio equipment and the nervous system of the man who was holding the microphone? I mean, was there actually a sound there? Are we sure of that?
- S. Well, I wasn't there. The police officers did not hear it acoustically, through the air, but it was a long distance away, and these particular frequencies, through a phenomenon we call molecular absorption of sound by the atmosphere will have a tendency to die out pretty quickly, especially in the early morning--a lot of moisture. So I really can't answer that. It's a possibility, but my feeling from listening to the recording about two dozen times is that that's not a likely answer to how the sound got down on the tape.
- ?? I have one thing I'd like to get into. It seems rather simple to take a tone-generator and send it up to those people and ask them to reconstruct the event, and ask the guy that operates the tone-generator to [in his own shop??] and verbally tell what tone he saw at 100 and 200 and 300, and record that in the police car, and bring it back and see what you get.
- S. Well yes...
- ?? If Bruce Maccabee would fund it. And that's the point--does anyone know what sound would be generated by an atmospheric plasma? The molecular activity, the electronic activity would certainly produce a noise.
- S. Yes it would, but I've recorded certain types of phenomena at all hours of the day and night as they propagate through the atmosphere, including distant interstates, distant aircraft, all types of physical phenomena--normal types that we're familiar with-- and they don't come out looking like that. Never, in 5000 spectra or more, but of course there's always a possible scientific explanation. It'd be nice to be able to go into that, as you just suggested, but of course, as has always been our problem, that requires research dollars.
- ?? Could you prove that the sound was outdoors?
- S. No. I mean we have the voices and the sworn testimony of the officers who saw the thing and Lucky 13's relation of the fact that he saw the object and that the sound was coming from that object and that he was recording it through his microphone. Quote "I hope you guys are getting this."
- ?? Can you tell if there's any movement through the sound itself?
- S. In listening to the tape a number of times I can hear a fluctuation in the sound of the object, and it is this fluctuation that makes me believe that it was a real acoustic signal, as opposed to someone creating a hoax by doing what I did in the laboratory to create it, which was to pass white noise through two filters-- a 1 K and a 3 K octave filter.
- ?? If you filtered out all the voices, would you end up with pure sound?
- S. Oh yes, and in the basement of my fellow acoustician, we played with this cassette ad nauseam, and got it down to the point where all I could hear was the upper frequency band, and I took away all the voices, and then I left only the voices and took away all the sound. And then we played games with controls on each of those, and in each instance, you know, it could be done, it could have been hoaxed; someone

could have mixed the sound of broad-band noise, but someone would have had to go to an awful lot of trouble to do that, and I can't imagine why they'd want to-- at four in the morning? But you never know.

- ?? You mentioned something about vibrating plates. My immediate question is vibrating plates made of what?
- S. Oh, a metal vibrating plate, but I have to tell you something about that. We only found a correlation at one small frequency band at the upper harmonic range of the spectrum you saw of the object, and no other correlation, so I sort of had to throw that one out on the basis of scientific inquiry, but I don't hold much credence in it's being a vibrating plate. At this point I can't imagine what it was that could have caused this. I have some feeling, some intuition on the type of propulsion device that could have caused this kind of signal, but we need a lot more data than what we have at the moment, including going to Oregon and discussing with the officers, if at this point they'd even want to discuss it, the phenomenon as it occurred, and also talking to the guy who did the recording.
- H. I also want to say that we have Robert Howard's taping of the actual conversation that went on between the two patrol cars and Lucky 13 and the office downtown, and that has to be taken into account in judging the integrity of the thing. It's not just a little snatch here and there, but this is a part of a total hour's--better than an hour's--recording, with the puzzlement of the officers, the excitement in the voice of Lucky 13, and all that would also have to be taken into account. But still we're not presenting this as an absolute, 100% proven UFO sound.
- ?? Is the upper frequency exactly three times the lower one, or only approximately?
- S. There's no relationship. That was the purpose of running it through the computer, to determine if, as opposed to a violin, which has an octave, a fifth, octave, third, fifth, octave type of phenomenon; or a bird, which has a similar type of octave and the fifth above kind of arrangement, this didn't correlate to any known type of motor or what have you that would have created that kind of a spectrum. What we had, as it appeared, was two discrete bands of noise operating simultaneously--almost as if you had a big, whirring type of object and another whirring type of object operating closely and in coordination with each other.
- ?? Well, you once mentioned the possibility of some sort of propulsion system. Are you saying that was an assumption on your part, or were you able to determine by the frequency of the sound that that was indeed the case?
- S. That's pure intuition on my part at this point.. We'd have to do alot more correlation between what various varieties of jet engines do, propeller engines do, and operating in coordination with each other, and that hasn't been done at this point. It just isn't part of noise analysis.
- ?? Have you estimated the total acoustical power of the source?
- S. That would have been almost impossible without some sort of calibration shown at the beginning of the recording. You have to have something to relate the source to vis à vis the recording system medium to be able to determine the power spectral density or any of those other acoustical phenomena that is the normal procedure when running through this type of analysis. I have no control, intensity or frequency, on the tape unfortunately.

- ?? There was another case that I heard--a sound generated over a local radio station in Toronto attributed to a UFO sighting that was picked up by police officers on their microphone in their car(s) which was recorded back at the station. At the same time an object appeared over a house and simultaneously an appliance--I believe it was a freezer, with a low voltage regulator-- was tripping out, and this was a recording that I heard.
5. I think the importance of this particular paper is essentially a challenge to get other recordings, because we can't do much on just one. It's certainly possible that you can get sympathetic harmonics interacting in mechanisms such as refrigerator compressors and that sort of thing, mainly because they operate over a line voltage at a frequency and its multiples of 60 Hertz so you get 60, 120, 180, 240. And the ear has a tendency also to key into that, because at 240 you're very close to middle C, so there's that acoustic psychological phenomenon as well.
- ?? I have an economic question. How much would it cost to hire you to analyze 100 tapes? Or in other words, how much did it cost for you to do this?
5. It didn't cost anything to do it because I did it on my own time. It would be hard to estimate what it would cost to do more of them. It would depend on the kind of tapes, the quality of the recordings, the medium, what kind of analysis is required. It's so difficult to estimate that, especially standing up at a podium. I'd have to think a long time on it. In general for this type of analysis the fee would run about \$3-400 a day, and I don't know how many tapes could be done per day. It depends on the complexity of the tapes and what's required in the way of editing, digital editing, analog editing, sifting out the voices--that sort of thing.
- When I did that analysis in the laboratory I spent about two and a half hours taking the 30 seconds of data and removing all the voices so I could get a version of the cassette onto a NAGRA tape recorder. I don't know if anyone is familiar with NAGRA recorders, but they're the "Cadillac" of the industry for scientific recordings. So I made a dub of the cassette in a rather crude manner onto the NAGRA open-reel tape, minus the voices of the CB-ers that were keying in and keying out of the recording, and that took about two and a half hours. That was just one tape, and I wasn't satisfied with the results. I would rather have had a digital editor that would have allowed me to take out all the potential voice interference and left only the pure signal itself.
- ?? Assuming that we were at the stage to get you 10 or 15 cases to analyze, in addition to just being able to say "I have 15 cases where it all comes up to the same frequency, what other types of information might you be able to develop?
5. I guess that would depend on the quality of the 15 cases. Certainly we can do correlation analysis between whether there's a harmonic relationship between the various tapes. We can determine if the basic fundamentals are similar. We can determine the number of temporal, or time-varying, peculiarities in the various sources, how long they lasted. I'd be surprised if you could find 15 of those. It would be nice.
- ?? My point was, aside from just creating some type of statistical correlation, that somebody who reports a UFO might be [more] inclined to listen to the sound associated with it. What if any extrapolations could be made from that as to the nature of any physical device involved?
5. It would add some credence to my intuitions as to what kind of propulsion system might create such a sound spectrum, but at this point, it's pure conjecture on my part what could have possibly, naturally, occurred in the atmosphere of a craft that was in the air that would create that kind of spectrum. At this point, the

only thing, and I'll throw it out because it's my intuition, perhaps, on it, that [it might have been] some kind of a helicopter type of craft. I emphasize type of because if it was a helicopter, I'm sure that the police officers would have been able to make note of it, and helicopters usually have some discrete tones in them that would show up, and this phenomenon doesn't.

- ?? Have sounds particular signatures, so that you could look at a graph such as you showed, and would be able to tell by that signature what that is, what kind of sound, almost like light radiation, a light absorption spectrum--anything like that with sound?
5. The problem with sound, and the problem of recording anything like that in the outdoors, is of course the interference of other sounds that intermingle immediately. There's a possibility to do some correlation analysis, as I mentioned previously, to sift out sounds of birds, sounds of crickets, sounds of mourning doves and that sort of thing, but it's difficult at best, and unfortunately it gets pretty tedious and expensive as a result of that after a while, but it can be done, yes.
- ?? This question is sort of related to putting my money where your mouth is. If, for example, the fund for UFO Research were to entertain a proposal to calibrate your system, and I think that there would be several ways that that could be done, to calibrate the acoustic train that this sound went through, and you were to analyze and provide a spectrum which is now corrected in terms of frequency response of the whole system, except that we haven't a control, since we obviously have no control over the atmosphere, would you be willing to write up something and send it to the Acoustical Society of America?
5. Yes, I've already considered doing that, but I might as well tell you that some of the colleagues that I presented this phenomenon to, for some reason inexplicable to me because of their past relationship to me--they've always been very neutral--more or less attacked the tape as soon as they found out what it was. That came as a bit of a shock--maybe it shouldn't have--but I am rather naive when it comes to this sort of phenomenon. But in regards to writing up something along those lines, I would defer to Dr. Hynek because it is his tape, and it would have to be done, of course in coordination with all the individuals who were involved in this.
- ?? It seems to me that you could write an article sort of entitled "Analysis of an Anomalous Noise Recorded in Oregon." It just seems that here is a possibility that should be tried. At our Executive Board meeting earlier we were talking about the necessity of getting something published in a real technical journal. Here is a possibility that I think should be tried.
5. Oh, I agree it should be tried--I'm just suggesting that, knowing the Society, and I have known them for ten years, and I'm on a few national committees with them, I know my honored and staid colleagues, and it won't be easy, but it's certainly worth the effort, and I'll try to make the effort.
- ?? What problem did your colleagues find in this tape?
5. I guess first of all the fact that the spectrum could very easily be re-created, and indeed I was able to do it in five minutes, but it didn't sound quite like the tape that we had from Oregon. In regards to your question about re-creating the sound train, it would do actually no good for this particular tape. Once something is encoded, it's very difficult to de-code out the various faults that occur in a recording train. The energy simply is not on a magnetic tape anymore. It just isn't there. You can do all the spectrum shaping that you want, but if the acoustic energy is not on the tape, then you don't know something that just isn't there.

- ?? You could see, for example, if a sound train very similar represented a low-frequency cut-off and a high-frequency cut-off. You could at least calibrate where those are.
- S. Yes, we would be able to determine that, that's correct. And you could correct some of the sidebands, that's correct.
- ?? Well, it would be nice to be able to say, if we were able to calibrate the system, "This is what it looks like before correction, and that is what it looks like after correction."
- H. One of the puzzles of this case is the very sharp cut-off at 3K. I would like to know, would that be a by-product of the CB's inability to do anything above 3K? I would normally suspect that there would be a sort of tapering off.
- S. Most CBs, Dr. Hynes, will go up to at least 7.5 or 8 kilohertz--at least in my understanding of them. Of course the loudspeaker that was in the police car--there's no telling where it's cut-off may have been. And the same is true for the microphone that was used for the original encoding on the other side of the Columbia River. I went through some readouts on CB systems' frequency responses, and they vary just all over the place. I'm talking about fluctuations of 10-15 decibels. So we'd have to get the original system, that's correct.
- ?? Yes, that's my question. You said there was no way, but if you had the original equipment and tested it out..
- S. Yes, and can you bring back the original UFO? We can re-create the sound system, because we can find out the kinds of equipment that we used. But the source itself--ah, now we're in trouble.
- ?? Has it been determined how far away the source of the sound was from Operator 13?
- H. About a mile. But again, I don't consider this case closed. I'd like to get out there and do this.
- ?? You made the statement earlier that in trying to reproduce the sound you were using equipment indoors in the sound laboratory. I infer that you say that there's no commercially available equipment that you could take outdoors, that is transportable....
- S. Oh yes, I could get some giant Altec Lansing loudspeakers and set them up on a shore, and put a 500 watt amplifier through it, and pass broadband sound through a 1K and 3K filter. Sure I could do this outside. I could put a big searchlight up in the fog. We could do it, you know, if you want to make a movie. Anything's possible. But would you want to do that at four o'clock in the morning in Oregon? I wouldn't. If someone had created the tape as I did in the laboratory and punched it into the microphone.. Let's say Lucky 13 wanted to do a hoax--this is a total supposition. Sure, all he'd have to do is put the microphone next to his cassette speaker with the sound on it, and maybe fluctuate the microphone near the speaker--yeah, it could be done, but why? I can't imagine.
- ?? And wouldn't Lucky 13 have to be waiting for the police officers to see the UFO? It would have to be all set up.
- S. Yes, they called him. It would have to be a total fabrication.
- H. Well, I think we're long past our time on this, though it has been very stimulating. Thank you very much.

# THE McMINNVILLE PHOTOS

BRUCE MACCABEE

## INTRODUCTION

On June 8, 1950 the local newspaper in McMinnville, Oregon (USA) published two photos of a "flying saucer" which had been taken by a farmer, Mr. Paul Trent. There was also a brief description of the sighting of the object by the farmer and his wife. Copies of the photos are presented in Figures 1 and 2. Several other newspapers published reports of the Trent sighting based upon independent interviews and an International News Service (INS) newswire story about the sighting. The INS also obtained the original negatives, which they never returned to the Trents (nor did the INS pay for the photos).

The Trent photos subsequently appeared in many UFO books and articles, but they did not achieve national recognition again until the publication of the report of the Colorado investigation<sup>1</sup> in 1969. In the opinion of the Trent case analyst for the Colorado report, Dr. William Hartmann, the photographic and verbal evidence in the Trent case was essentially consistent with the claim that "...an extraordinary flying object flew within sight of two witnesses." Hartmann admitted, however, that a hoax could not be positively ruled out.

Later an investigation by Klass and Sheaffer<sup>2</sup> indicated that the photographic evidence used by Hartmann<sup>1</sup> was not conclusive and that, furthermore, there seemed to be some discrepancies between the photographic evidence and the witnesses' story. Moreover, the stories published in the newspaper accounts seemed to be inconsistent with what Klass would have expected

if the story had been true. A subsequent investigation<sup>3,4</sup>, of the original negatives confirmed Hartmann's conclusion about the excessive brightness of the bottom of the image of the Unidentified Object (UO) and eliminated the claim<sup>2</sup> that there was a relatively long time lapse between the photos.

Computer-aided analysis carried out by GSW, Inc.<sup>5</sup> failed to indicate any evidence of a suspending wire or thread above the UO, and the analysis did indicate a possibly excessive amount of distortion of the edge of the UO which might be evidence that the UO was as far distant as indicated by the photometric analysis<sup>1,3,4</sup>. Analysts at the Jet Propulsion Laboratory also searched for, and failed to find, indications of a suspending thread. Unfortunately the JPL analysts did not investigate the edge distortion.

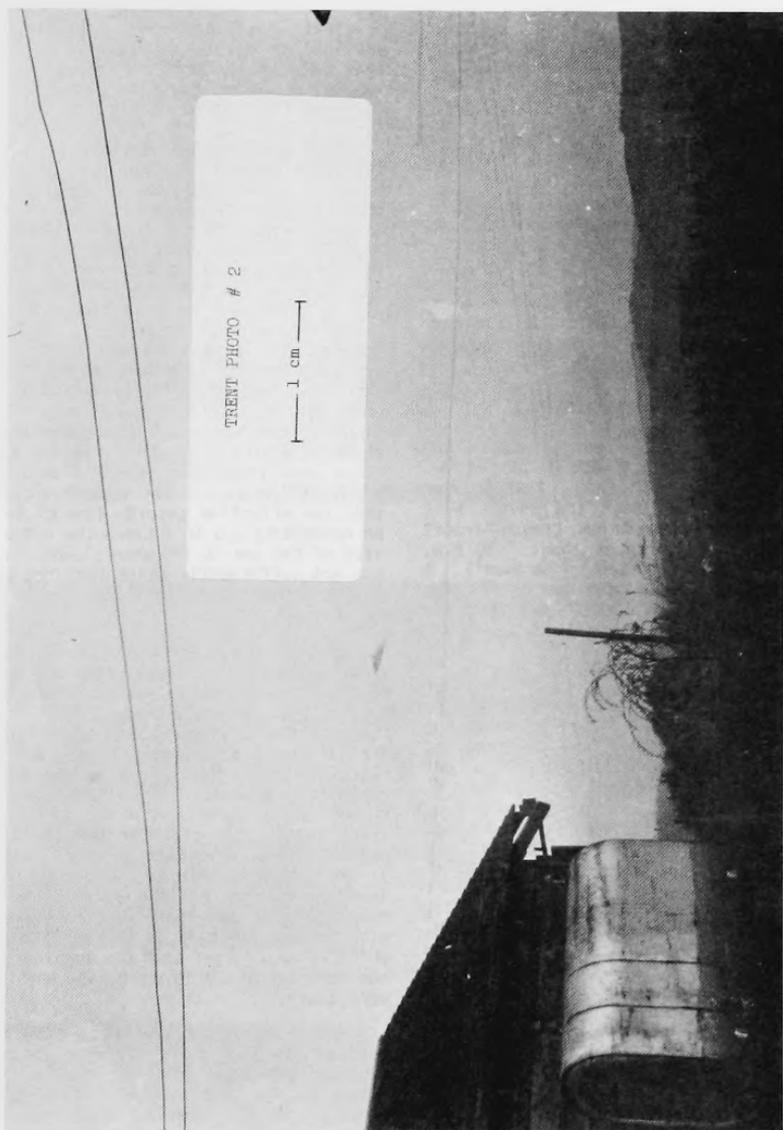
An intensive investigation into the background of the sighting and into subsequent developments was carried out by the author between January 1974 and November, 1977 (when the first version of this paper was written). I have concluded, from communications with many people who have talked with the Trents, that no one who has met them personally would believe that they would or could perpetrate a hoax as successful and long lasting as their "flying saucer" report. (Note: Hartmann was initially convinced after interviewing the Trents<sup>1</sup>, but later changed his mind<sup>2,6</sup> after reading Sheaffer's analysis<sup>7</sup>). I have further concluded, contrary to the opinions expressed in Ref. 2, that it cannot be proven by either verbal or photographic evidence that the case was a hoax.

TRENT PHOTO # 1

| — 1 cm — |







Instead the available verbal and photographic evidence strongly suggest that the sighting was not a hoax.

#### Date of the Photos

The "classical" date, as reported in the initial newspaper stories<sup>8,9,10</sup> is May 11, 1950, which was a Thursday. That date is accepted here despite the contradiction between the weather reported in a newspaper story (sky overcast at 5000 feet<sup>10</sup>) and the McMinnville Airport weather report (mostly clear sky<sup>11</sup>). The photos show only a featureless sky with slight brightness variation looking northwest, which could be consistent with either a nearly clear sky, or a sky that is uniformly overcast.

#### The Time of Day and Shadow Analysis

The initial newspaper reports placed the time at 7:45 P.M.<sup>8,9</sup> or 7:30 P.M.<sup>10</sup> local time. Mrs. Trent has repeatedly claimed that the sun had not yet gone down when the photos were taken<sup>12</sup>. According to the Salem, Oregon Airport Weather Report<sup>13</sup>, sunset was about 7:30 P.M. (rather than 7:15 as reported by Hartman<sup>1</sup>). A visible sunset would be consistent with the nearly clear sky reported for the evening of May 11.

Klass and Sheaffer<sup>2, 14</sup> have pointed to the rather sharp shadows of the ends of the roof rafters on the east wall of the garage at the left side of each photo as "proof" that the photos were taken in the morning rather than in the evening. The shadows of the end of the roof and of the roof rafters are illustrated in Figure 3, which is a highly magnified portion of the garage wall shown in Photo 1. Klass has argued that the motive for saying that the photos were taken in the evening rather than in the morning (assuming a hoax) was to make the lack of reports from other farmers more plausible, because, according to Klass, around 7:30 P.M. "most farmers have retired to their houses for dinner..."<sup>2</sup>. However by Klass's reasoning, the lack of reports from other farmers would also be explainable if the photos were not a hoax, and an "extraordinary flying object" did fly by in the evening.

In order to determine whether or not the shadows could have been made by any source other than the sun, such as, for example, a brightly

reflecting cloud, I have made careful densitometric measurements of the brightness of the original negatives. These measurements are outlined in detail in Appendix A. They show that the shadows under the edge of the roof are more diffuse than would be expected from solar illumination even on a hazy day.

From experimental measurements made with a shadow brightness scanning apparatus used outdoors on clear and cloudy days, I have found that the effective angular size of the solar disk increases with an increase in cloud thickness. Because the effective angular size of the sun determines the width of the shadow gradient region (the "edge") between an area of full illumination and an area that is completely shaded from direct solar rays, an increase in angular size also increases the width of the gradient region. (Note that the increase in effective angular size is strongly dependent upon how "effective angular size" is operationally defined. In these experiments the measured widths of gradient regions for various cloud conditions were used to define angular sizes of the sun.) The experiments indicated that the effective angular size of the sun may be as much as 2.5 to 3 times the actual angular size of the sun ( $0.5^\circ$ ) when clouds covering the sun are sufficiently dense that the brightness of the shaded and unshaded areas differ by only 1% or less.

By comparison, the width of the shadow gradient region of the shadow under the edge of the roof of the Trent garage is 10 or more times greater than one would expect if the shadows were made by the unobscured sun (see Appendix A). Even if one assumes that the sun was partially obscured by clouds so that the contrast in brightness between fully illuminated and fully shaded areas agrees with the contrast in the Trent photos, the width of the shadow gradient region is 3 or more times greater than expected if the (partly obscured) sun were the source. Thus the horizontal shadow data (the "edge" of the shadow of the roof) suggest that a source with an angular size in the vertical direction which is much larger than the angular size of the sun was east of the Trent garage when the photos were taken.

Besides the horizontal shadow under the edge of the roof there are also shadows of the ends of the roof rafters. Sheaffer analyzed these shadows and concluded that the angular size of the source might be more than  $10^\circ$  in the horizontal direction<sup>7</sup>. Scanning densitometer



FIGURE 3

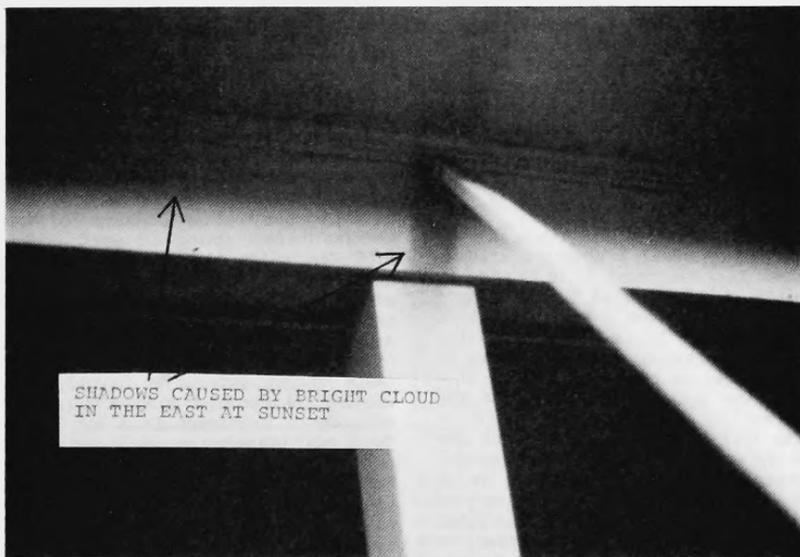


FIGURE 4

data are sufficiently noisy to be somewhat equivocal on the angular size of the source in the horizontal direction, but they appear to indicate an angular size in the range  $3^{\circ}$  to  $4^{\circ}$ . Taken together the horizontal and vertical shadow edge data suggest that the light source may have had an angular size of more than  $5^{\circ}$  in the vertical and  $1^{\circ}$  to  $4^{\circ}$  in the horizontal directions.

As explained in Appendix A, one does not expect the edges of shadows made by the sun to be noticeably diffuse, even when the sun is partially obscured by clouds. An alternative source of light of relatively large angular size would be an optimally reflecting cloud east of the Trent garage at sunset. In order to resolve the question of whether or not a cloud could produce such shadows I first carried out a theoretical investigation making use of sky and cloud brightness data. Although the investigation was not conclusive, it did indicate that shadows such as appeared on the Trent garage might occur if a large enough cloud were optimally illuminated.

Conclusive evidence that clouds can produce rather sharp shadows was obtained in the summer of 1977, and is presented in Figure 4. A cumulus cloud east of my house was observed (quite by chance) to produce shadows of the edge of the roof at sunset, and I immediately obtained my camera and photographed shadows of the edge of the roof and also of a board which I leaned against the house. The cloud which produced the shadows was not particularly bright and had an angular size of about  $5^{\circ}$  or  $6^{\circ}$  in diameter. It made shadows which appear to be quite sharp, as do the shadows on the Trent garage.

In an earlier "sighting" of cloud shadows (the late summer of 1976) I observed shadows made by a cloud that was about  $2^{\circ}$  to  $4^{\circ}$  wide by about  $8^{\circ}$  to  $12^{\circ}$  high (estimated by the "finger technique"--a finger at arm's length subtends an angle of about  $2^{\circ}$ ). This cloud, illuminated at sunset, was bright enough to make a shadow of my finger ( $3/4$ " wide) on the white surface of a car when my finger was about a foot from the car. This earlier sighting took place in Florida. The 1977 photographic evidence was obtained in Maryland. I have since been informed of an observation of cloud shadows in San Francisco<sup>15</sup>. Thus it appears that, contrary to the opinion advanced by Sheaffer<sup>7</sup>, illuminated clouds can make surprisingly sharp shadows.

Having shown that cloud shadows can occur, it would now be necessary to demonstrate that there was a brightly lit cloud east of the Trent garage at about 7:30 P.M. on May, 11, 1950. This is, of course, impossible to do (without resorting to the shadow data in the Trent photos). However, the weather reports for both McMinnville and Salem, Oregon indicate that there were cumulous clouds in the area during the afternoon of that day. Both of these weather reporting stations are east of the Trent farm (the McMinnville station is northeast and the Salem station is southeast).

Besides the shadow data, there are also other brightness data in the Trent photos which suggest that the sun was not the source of light east of the garage. The brightness scale, to be described in a later section, is much lower than one would expect if the sun were the light source.

The verbal testimony of Mrs. Trent has a considerable bearing on whether or not the photos might have been taken in the morning. In many conversations (by phone) with Mrs. Trent I asked her questions which, I believe, she had never been asked before, at least not in relation to the UO photos. Some of these questions had to do with the daily activities of the Trents. Her answers were quite consistent during the three year period of our conversations.

According to Mrs. Trent, she was "out feeding the rabbits in the yard alongside the garage"<sup>9</sup> just before she saw the object. (She told the same thing to Hartmann.) I therefore asked her in several different conversations and in different contexts when she fed the rabbits. She replied that she fed them in the morning before going to work (i.e., before 8:00A.M.) and in the evening. I also asked her what their usual morning and evening activities were "back in those days". She recalled that she and her husband would arise about 4:30 A.M. and take care of the animals in the barn (cleaning, milking, etc). After finishing these chores and eating breakfast Mr. Trent would drive a truck from farm to farm collecting milk for transport to a local dairy. His "milk run" began between 5:30 and 6:30 A.M., and he usually did not finish until after 10.00 A.M., depending on the number of farms he had to visit. Mrs. Trent pointed out that this milk run took place daily except under unusual circumstances (sickness, very cold weather). In

the afternoon Mr. Trent worked in the Alderberry farm. He would have been home in the evening after about 6:00 P.M.<sup>10, 16, 17, 18.</sup>

Besides the farm chores, Mrs. Trent had to take care of her children (whom she left with her mother-in-law) before going to work at about 8:30 A.M. with a friend. She worked at a chicken cannery until late in the afternoon. Thus the daily schedule of the Trents strongly suggests that they would not have had time for perpetrating a photographic hoax in the morning. Moreover, the schedule indicates that Mr. Trent would not even have been home in the 7:15 to 7:45 A.M. time frame suggested by Sheaffer.

Clearly the Trents were very busy people in those years.\* They had plenty to do besides thinking or ways to create a photographic hoax to "prove" that Mrs. Trent had actually seen "flying saucers" three times before, as implied by Klass<sup>2</sup>. (Note: her previous sightings might have been misidentifications, as are the bulk of UFO reports). If the Trents had publicized their photos widely and had tried to capitalize on their success one might be tempted to think that they had created a hoax for monetary gain. As pointed out by Hartmann, however, there is no indication that the Trents ever received any money for their photos, nor is there any indications that they ever tried to capitalize on their photographs.

#### The Weather

The last sentence of Reference 9 states that the sky at 7:30 P.M. was "overcast at 5000 feet." Hartmann indicated that this sort of cloud cover was "confirmed" by the photos<sup>1</sup>. Klass<sup>2</sup> obtained the McMinnville airport weather report and found a sky cloudiness symbol which he interpreted as meaning "perfectly clear." Actually it means "less than 10% sky cover," allowing for the presence of some clouds<sup>19</sup>. The McMinnville airport is about 12 miles northeast of the former Trent farm. Another nearby airport, at Salem, Oregon, is about 17 miles southeast of the farm. The Salem airport reported about 10%

sky cover consisting of altocumulus at 12,000 feet and about 25% sky cover consisting of cirrus at 25,000 feet. Both airports reported cumulus clouds, which are puffy clouds with considerable vertical structure, in the afternoon, with the Salem airport indicating about 10% sky coverage with cumulus clouds at about 3,000 feet.

For comparison, at 7:30 A.M., according to the McMinnville airport, the sky was "clear" (i.e., less than 10% sky coverage). According to the Salem airport the sky was 40% covered with cirrus clouds at about 25,000 feet. Visibilities were in the 12 to 15 mile range and the wind was negligible. As Klass has pointed out, the McMinnville airport reported "smky" conditions, which is interpreted as meaning smoky. No such conditions were reported at the Salem airport, although earlier in the morning there was some ground fog near the Salem airport.

The photos neither confirm nor deny the sky conditions given by the airports. The photos show a sky which brightens toward the west, but is otherwise quite featureless. As pointed out by Sheaffer<sup>7</sup>, such a brightness distribution can be consistent with the sun being either in the east or west because of the nature of the scattering of light by small particles and molecules. There does seem to be a sort of haze over the distant mountain tops. This seems to be a real image rather than a fault in the development of the negatives. The "haze layer" does not have much contrast with respect to the sky, but it does appear slightly darker than the sky.

Whether this is a relatively nearby haze or a distant, very thin cloud cannot be determined. However, if this were a distant cloud being illuminated by the sun in the east, one might expect it to appear brighter than the surrounding sky rather than darker, since water drops scatter light more strongly than clear air. On the other hand, if the source of the light were in the west and the light was therefore coming through a thin cloud or haze layer, then less light would get through where the cloud is thickest, and this could make the cloud appear darker against the surroundings.

\* I have considered the question: Why do it on the morning of a weekday (if a hoax)? Why not on the weekend when at least Mrs. Trent would not have had to go to work? After all, hoax photos could be taken at any time convenient to the hoaxers. It doesn't seem that a weekday morning would have been very convenient.

Because the photographs can no longer be used as positive proof that the photos were taken in the morning, and because the daily activities of the Trents made it unlikely or impossible for Mr. Trent to have taken the photos at about 7:30 A.M., it appears that the

weather conditions at the time of the sighting were those conditions prevailing at about 7:30 P.M. on May 11, 1950.

The Sighting

According to the original sources<sup>1,8,9,-10,12</sup> (Hartmann's report is considered to be an original source since he actually interviewed the Trents), Mrs. Trent had been feeding the rabbits which were in a cage located south of the house and east of the garage wall<sup>1</sup> and had just started walking back toward the house<sup>10</sup> when she first saw the object. She yelled to Mr. Trent who was in the house and they both scrambled to find the camera.\* As soon as they

found the camera Mr. Trent ran into the back yard just south of the back door of the house and saw the object. He took two pictures, pausing between pictures only long enough to wind the film in the camera. Available verbal and photographic data indicate that Mr. Trent took the photos from a location about 20 feet south of the house and 30 feet east of the garage. Mr. Trent moved several feet to his right to take the second picture. Then Mrs. Trent saw Mr. Trent's mother and father on the back porch of their house about 400 feet west of the Trent house<sup>9</sup>. They called to them to look, and Mrs. Trent ran into her house to call the parents on a telephone line.

\* One may wonder how it happened that Mrs. Trent had the presence of mind to think of a camera, when it is known that in some cases witnesses who have cameras nearby have not thought to use them (see, for example, *Missing Time* by Budd Hopkins, Richard Marek Publishers, New York, 1981, pg. 29). Her quick thinking may have been a result of previous sightings. According to Ref. 9, Mrs. Trent had seen similar objects three times before. Whether these were bonafide sightings or misidentifications is immaterial as long as she thought she had seen similar things previously. Perhaps in the previous sightings she had wished she had a camera because, according to Ref. 9, no one would believe her. Apparently "no one" included her husband, because he was quoted as saying "I didn't believe all that talk about flying saucers before, but now I have an idea the Army knows what they are." (Ref. 10) But this time when she saw an unusual object she was at home with her husband and she could prove it to him. Moreover, she knew that a camera was available, so she yelled to her husband to get the camera, and they looked, apparently in different places, until they found it. From the original stories and what she has told me it seems reasonable that she looked in the car while her husband, who was in the house, looked in the house for the camera.

Klass (Ref. 2) has used her claim to have seen objects three times previously as a "reason" for the presumed hoax: "Now, thanks to the photos, skeptical friends would be convinced." Apparently, if Klass is right, she must have convinced her husband before the photos were taken since hoax photos would not be proof enough for him. Either that or she convinced her husband to put on a blindfold and take pictures in the backyard while, unbeknownst to him, she

hung a model saucer under the wires in line with the direction he was photographing. Then, after the pictures were developed, he was "convinced".

Klass, (Ref. 2) has pointed out also that the Trents were "repeaters", although in fact, only Mrs. Trent reported several sightings before the photos and several afterward. This presumably means that the Trents have seen "impossibilities" occur more than once. This is highly improbable if UFOs are real, and of course, impossible if they are not. Assuming with Klass that UFOs (saucers) are not real, then the repeated sightings must be either misidentifications or hoaxes. Since by this assumption the photos must be a hoax, then it is reasonable to assume that at least some of the later sightings were also hoaxes, to bolster their story. But pushing this assumption to its consistent limit, and considering the success of the 1950 "hoax" photos, the Trents should have produced more photos to back up their claims of further sightings. Instead, according to Mrs. Trent (who supposedly had a need to create a hoax to prove herself right in 1950), "We've seen quite a few since then, but we didn't get any pictures--they flew away too fast." (Ref. 41) If the original photos were hoaxes, then Mrs. Trent's reason for not producing more pictures must be considered to be an excuse--a "cop out". It would have been easy to produce more hoax pictures, assuming the first ones were, and apparently not time-consuming since they managed to do it during one of their busy days in 1950. Perhaps the Trents were too lazy to produce more photos? But this seems inconsistent, since they are apparently very industrious people otherwise. Actually the failure to produce further pictures in spite of the later sightings makes it seem more likely that the original photos were not the product of a hoax.

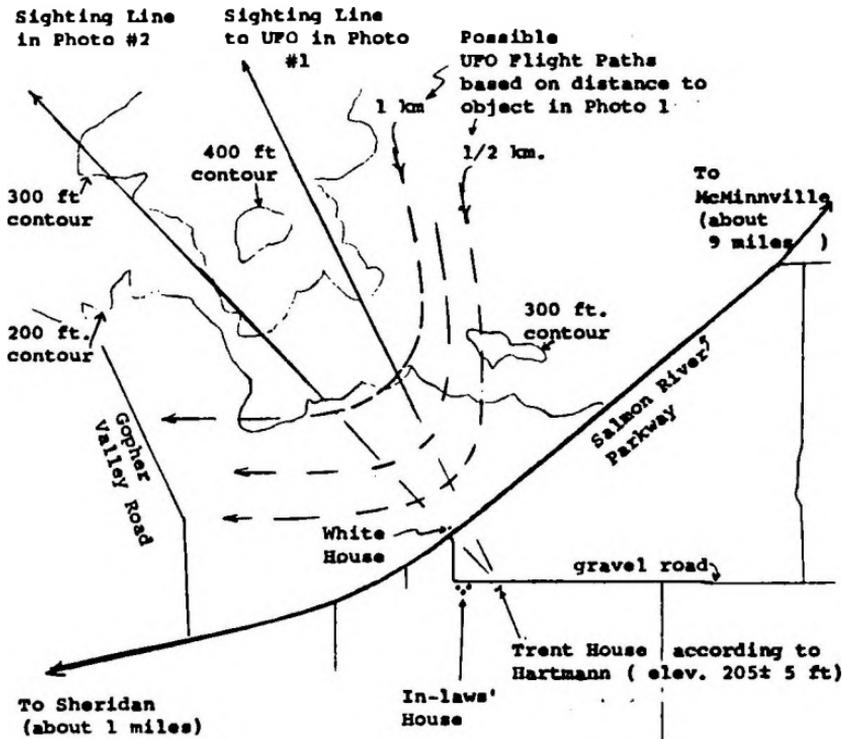


FIGURE 5  
 Geographical Layout and Possible UFO  
 Flight Paths (ignoring the loop described  
 by Hartmann)

Contour lines of nearby hills are from the U.S.  
 Geological Survey Map from which this map was traced  
 (Ballston, Oregon; 7.5' series)

Mrs. Trent said that there was no answer on the phone<sup>9</sup>, so she ran back into the yard in time to see the object vanishing in the west. Mr. Trent's mother had apparently gone into the house, apparently to answer the phone<sup>9</sup>, because she was no longer on the back porch of the other house when Mrs. Trent came back outside. Apparently Mr. Trent's father heard Trent and his wife yelling and looked in time to see a distant shiny object fading into the distance<sup>21, 22, 23, 24</sup>. The Trents think that Mr. Trent's mother may have seen the object, but they are not sure<sup>25</sup>. During the interviews with reporters the Trents did not mention that Mr. Trent's father had also seen the object because they did not want Mr. Trent's parents to be bothered by reporters, especially since Mr. Trent's mother was ill with cancer at the time<sup>25</sup>.

### The flight of the Object

All the original sources of information agree that the object approached from the north-northwest at a rapid rate of speed. An estimated path of the object is illustrated in Figure 5. This map is based on the general approach and departure directions and also upon Mrs. Trent's statement that it never actually passed over their farmhouse, but rather that its point of closest approach may have been near the distant farmhouse that appears in both photographs<sup>26</sup>. That farmhouse is on the west side of the Salmon River Parkway according to Hartmann<sup>1</sup>. Hartmann included a loop in the reported flight path of the object, suggesting that the flight path may have been more complicated than the path illustrated in Figure 5. Mr. Trent reported that the object climbed rapidly during departure and that he didn't have time to run around the garage to see it and photograph it once more. According to Reference 9, Mr. Trent found his camera and "took two shots." During this time the object moved across the horizon through an arc of about 15 degrees according to her description."

This quantitative estimate of the angular motion of the object across the western sky agrees quite closely with the angular displacement measured from the two photos by comparing the sighting directions in each. In Photo 2 the object is about 17° to the left of the sighting line in Photo 1. (Mrs. Trent would have had to be quite lucky to have described a flight path that would have given about a 17° spacing between sighting lines, if the object

had actually been a small model hanging under the overhead wires, as required by the hoax hypothesis suggested by Klass and others<sup>1, 2, 7</sup>.

### The Object

The photos clearly show that the object had an overall circular or oval shape. The witnesses described it as "bright, almost silvery"<sup>8</sup>, "brightly metallic, silver or aluminum colored, with a touch of bronze"<sup>9</sup>. When Hartmann interviewed the Trents in 1967 they repeated their general descriptions, adding that it seemed silvery on top and more bronze on the bottom, that it was "shiny but not as bright as a hub cap", and that it "resembled a dull, aluminum painted tank."<sup>1</sup> These descriptions are consistent with the brightness description of the object in the photographs. The upper surface in Photo 2 is seen to have a highlight implying at least a partially specular surface. The bottom of the image in Photo 1 is clearly darker than the top part, but probably most of this darkening results from the shading of the lower surface.

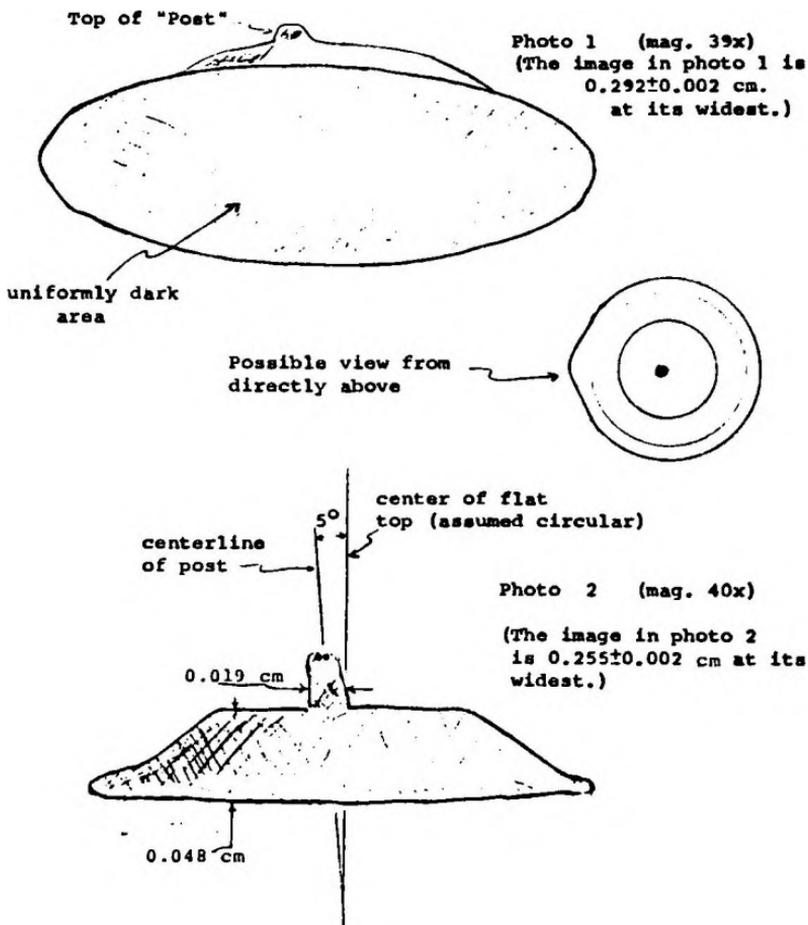
There is some indication that the left edge of the object as seen in Photo 1 is not a perfectly smooth round (or elliptical) contour, but may actually be more pointed, as illustrated in Figure 6, which contains tracings of 40x blowups made by Hartmann. At such large magnifications the fuzziness of the edges of the images becomes apparent, and therefore the solid boundary lines indicate only the approximate edges of the object. To within the accuracy of the photographic medium, it appears that the left edge is not perfectly circular. A small drawing illustrates the outline as seen from above which would be consistent with the photos.

The blowup of Photo 2 shows, again to within the accuracy of the photographic medium, that the right and left edges are not identical. Moreover, the "post" on the top is not centered (it is slightly to the left of center) and it tilts slightly to the left. In both the tracings of Photo 1 and Photo 2 the density of the crosshatch lines is intended to indicate the relative darkness of the surface.

The post tilts to the left at an angle of about 5°. It is not uniformly bright, but appears darkest near the main body of the object, and at two small regions ("dots") near the top. These dark dots near the top are also seen in Photo 1, just barely protruding above the main body of the object.

FIGURE 6

MAGNIFIED VIEWS OF THE UNIDENTIFIED OBJECT



The camera focal length was about 103 mm<sup>27</sup>. Therefore if the object had been 16 ft away (under the nearby wires) the size would have been about  $(2.92 \text{ mm}/103 \text{ mm}) \times 16 \text{ ft} = 0.45 \text{ ft} = 5.4 \text{ in.}$  If it had been at a distance of about 1/2 km (see Figure 5) it would have been about 14 m in diameter. The thickness, from Photo 2, would have been about  $(0.48 \text{ mm}/103) \times 17 \text{ ft} = 0.679 \text{ ft} = 0.95 \text{ in.}$  if 17 ft away, and it would have been about 2.3 m if at a distance of 1/2 km. The diameter of the pole would have been about 0.38 in. if at a distance of 17 ft, and about 0.92 m if at a distance of 1/2 km.

### Analysis of the Photographs

#### A) Resolution

The photographs were taken with a Kodak Monitor or Vigilant type of camera (the original camera was lost years ago) which had either a  $f/4.5$  or  $f/6.3$  (the least expensive) lens. The rated focal length with the bellows extended and locked was 102 or 105 mm (I have used 103 mm<sup>27</sup>). The camera was evidently well focused since distant telephone wires can be seen easily in the photographs. The most distant wires were probably over 60 m away. Using a wire diameter of about 0.6 cm (1/4 in) the angular width of the distant wires would have been about  $10^{-4}$  radians. Experiments with detection of small linear structures (e.g., threads) by photographic means indicate that if there is sufficient contrast between the structure and the background a linear structure much smaller than the grain size of the film can be detected. Since the grain size of the film used by the Trents was on the order of 5-10 microns, linear structures with images as narrow as 0.5-1 micron might be detectable, corresponding to angular sizes of about  $10^{-3} \text{ mm}/103 \text{ mm} = 10^{-5}$  radians (where 1 micron =  $10^{-3}$  mm). This would correspond to a thickness of about 0.05 mm at a distance of 5 m (about 16 ft), which would have been the distance to the object if it had been hanging under the overhead wires. A typical thread is about 0.03 to 0.06 mm in diameter.

Images comparable in size to the film grain are very "bumpy" or rough. The film grain accounts for a portion of the blurring of the edges of the images in the photographs. This blurring is especially apparent in the high power blowups of images. Other contributors to image blur are diffractive (MTF) effects and perhaps a slight amount of imperfect focus.

In spite of the slight blurring effects due to film grain, diffraction, and slight defocus, it appears that the photographs should have been able to detect a linear structure as small as a thread under the illumination conditions prevalent at the time if the thread were black or white, but not if the color had been matched to the sky. No such structure has been found in any analysis of the photographs.

#### B) Photometric Estimate of the Distance of the Object

The relative brightnesses of the various objects appearing in the photographs allowed Hartmann to estimate the distance to the object by making some assumptions about its intrinsic brightness or reflectivity<sup>1</sup>. (The photometric analysis of Hartmann was criticized on fundamental grounds by Sheaffer<sup>2,7,14</sup> and by myself<sup>27</sup>.) Hartmann noted that the image at the bottom of the object in Photo 1 (i.e., the dark elliptical image), which was presumably shaded from skylight, was nevertheless brighter than any of the other shadows in the photo. He then argued that the excessive brightness would be consistent with an object that had an intrinsically dark surface (not illuminated) and which was a considerable distance from the camera.

Light scattered by the atmosphere between the camera and the object could increase the apparent brightness of the surface. He used a simple formula that relates intrinsic brightness, apparent (i.e., photographic) brightness, and object distance in order to predict the distance for various assumed intrinsic brightness levels of the bottom surface. His calculations led to an estimate of about 1 km to the object in Photo 1, even if the bottom of the object was as intrinsically bright as one could expect for a purely reflective surface, that is, for a white bottom. If the bottom was intrinsically darker than white, (say, bronze colored, as reported by the witnesses), the calculation implied an even greater distance.

Sheaffer was the first person to point out that veiling glare could account for the excessive brightness of the bottom<sup>2</sup>. I undertook a study of veiling glare and published a rather comprehensive paper on the subject (with no reference to the McMinnville photos) in a technical journal<sup>28</sup>. During the study I determined how much veiling glare would have added to the

brightness of the UO image, so that I could subtract the veiling glare, leaving the true image brightness. I also discovered a factor not accounted for by either Sheaffer or Hartmann which affected the estimate of the intrinsic brightness of the bottom surface of the UO. The complete details of the revised calculation were published in Ref. 27, along with the conclusion that, if the bottom surface was not itself a source of light, the object would have been about a kilometer away. This calculation has not been challenged<sup>14</sup>. However, as I pointed out<sup>27</sup>, this does not prove that the object was distant, because the bottom surface could possibly be a source of light. The uniformity of the brightness distribution and the small size of the object (if hanging under the wires) would rule out an internal source of light such as a small light bulb. If the hypothetical model were translucent, however, light from the source which produced the shadows could travel through the UO and out the bottom, creating an excessively bright bottom. Experiments with simple paper models under illumination conditions such as prevailed at the time indicated that a simple paper model might not yield a sufficiently constant brightness bottom (the bottom surface closest to the light source would be brighter than the portion of the bottom farthest from the light source). Still, the experiments did not rule out the possibility that a model might be constructed out of some material in such a way as to create a uniformly bright bottom.

The general conclusion from the photometric analysis of the UO is that the brightness is consistent with witness's claim that the object was approximately over the distant farmhouse or farther away, as indicated in Figure 5. The photometric analysis did not, however, prove that the object was distant.

### C) The Brightness Scale of the Negatives

The most noticeable overall feature of the negatives is the apparent underexposure (Hartmann referred to the negatives as "thin"). The lack of high photographic density regions suggests that the camera shutter speed and/or the f stop setting was not correct for the amount of available light. (Another possible explanation for the "thinness" of the negatives which I considered was that the negatives had been underdeveloped. However, a comparison of the "fog densities"--in regions of the film which had not been exposed to light--indicated that the film was developed at least to a film "gamma" rating

of 0.4, and probably to a gamma of about 0.6 to 1.0. Standard development procedure required that film be developed long enough to reach a gamma of 1.0)

A quantitative measure of the degree of exposure of a film is called the brightness scale. This is the ratio of the brightness of the brightest area of the photograph to the brightness of the most shaded area. In the Trent photos the brightest areas are in the image of the sky, and the darkest areas are in the image of the shadow of the nearby tank. The brightness scale for the Trent photos is about 13, which is considerably lower than for normal, front-lit scenes in which the main source of light is behind the photographer.

Jones and Condit<sup>30</sup> found that the brightness scale of front-lit scenes in which the sun was the source of light (clear days) ranged from 40 to 600. Even when the sun was largely obscured by clouds the brightness scale was greater than about 30. Thus the brightness scale of the Trent photos is inconsistent with the claim that the source of light was the sun east of the garage. The low brightness scale would not be inconsistent, however, with the lighting conditions at sunset when there was a bright cloud east of the garage, because the cloud would not change the brightness of the western sky and because the generally uniform lighting near sunset would result in a low brightness scale for any photographs, regardless of the direction in which the photographs were taken.

Low overall exposure (but not a low brightness scale) of the photographs is consistent with the hypothesis that Mr. Trent did not change the camera settings (shutter speed and f stop) from the values which were used when he took the previous pictures on the roll. The previous pictures were presumably taken during bright daytime conditions (a snow scene and a picture of a tree in the front yard of his house<sup>31</sup>). The same settings would produce underexposed pictures if used to take pictures in the evening during sunset when the lighting levels (illuminances on object surfaces) are one fifth or less of the values when the sun is at an angular altitude of twenty degrees or more<sup>32</sup>. Considering that the previous photographs had been taken during bright daytime conditions, it is probable that the camera settings were in the range f/16 to f/22 and 1/50 to 1/100 of a second when Mr. Trent photographed the UO.

From the analysis of the brightness scale and exposure level of the UO photographs I have concluded that the photos were not taken in the morning with the sun east of the garage. The brightness scale and general exposure level of the photographs is not inconsistent with the witness's claim that the photos were taken in the evening, nor are they inconsistent with the hypothesis that a bright cloud in the east could have produced the shadows on the garage.

#### D) Photogrammetric Analysis of the Nearby Model Hypothesis

Whereas photometry, discussed in the previous sections, is a study of relative brightnesses of objects, photogrammetry is a study of the relative angular sizes and relative directions of the various objects in the photographs. Photogrammetry and photometry are therefore independent types of analysis (e.g., an object of large angular size could have any relative brightness, and an object of some particular brightness could have any angular size). Therefore the comment by E.U. Condon that F. Merritt rejected the Trent photos on the basis of photogrammetry<sup>33</sup> did not justify Condon's implication that Hartmann's photometric analysis was wrong. (It is interesting to note that in his summary, Condon never mentioned Hartmann's conclusion. Instead he referred to the Trent photos as "too fuzzy to allow worthwhile photogrammetric analysis". This may have been a deliberate attempt to confuse the lay reader and thus to "hide" Hartmann's conclusion. I'm sure that Dr. Condon knew the difference between photogrammetry and photometry. Perhaps he hoped that the lay public wouldn't know the difference.)

The main thrust of the photogrammetric analysis, apart from the simple estimate of actual size of the UO from its angular size once a distance has been specified, is to determine whether or not the photographic evidence is consistent with the hypotheses that the UO was a model hanging under the wires. Attempts at a truly accurate photogrammetric reconstruction of the sighting have been hampered by a lack of data on the distance of the photographer from the garage wall, the exact location of the overhead wires, and the distance from the garage wall to the Trent house. (All of these measurements could have been made by Hartmann when he visited the site in 1967. Unfortunately several years

after Hartmann's visit the former Trent farmhouse burned down, and still later the garage was torn down.) Nevertheless it has been possible to estimate the locations of the photographer and the overhead wires with some accuracy just from information contained within the photographs, combined with some educated guesses as to true sizes of objects near the garage.

The analysis has considered the following questions: a) do the sighting lines cross under the wires, and (b) are the relative angular sizes of the UO in the photos comparable to the relative distances of the photographer from the point where the sighting lines cross? If it were possible to show that the sighting lines crossed under the wires, then one would have a rather unlikely occurrence if the UO were large and distant. Similarly, if the ratio of the angular size of the UO in Photo 2 to the angular size of the UO in Photo 1 is the same as the ratio of the distance of the photographer from the point of intersection of the sighting lines when Photo 2 was taken to the comparable distance when Photo 1 was taken, one would have another rather unlikely occurrence if the object were distant. If both (a) and (b) occurred--the sighting lines crossed under the wires and the angular size ratio of the object equalled the ratio of distances to the sighting line crossover point--then the photogrammetric analysis would definitely point toward a nearby model rather than a distant object, since conditions (a) and (b) would be satisfied if a model were hanging under the wires, but would probably not be satisfied if the object were large and distant.

The analysis is presented in Appendix B. I have pointed out the specific difficulties with the analysis in the absence of dimensional data. However, several attempts at reconstructing the area of the sighting, such as is indicated in Figure B-2, have yielded similar answers to questions (a) and (b): the sighting lines do not cross under the wires and the object size ratio does not equal the photographer distance ratio. Of course, the failure to prove that the sighting lines cross under the wires and the failure to prove that the size ratio is the same as the distance ratio does not mean that the photos cannot be a hoax. If the UO were swinging toward and away from the photographer in a pendulum-like motion, or if the hypothetical suspension of the UO were moved along the wire between photos, the sighting lines would not cross under the wires and the two ratios would not be equal. Thus the

most definitive answer I can give about the photogrammetric test is that the test does not prove that the photos are a hoax.

#### Events Following the Date of the Photographs

The history of the Trent photos is quite long and complicated. Some specific details will be presented later, but first let me summarize the history. After the photos were taken the Trents waited about three days (until Mother's Day<sup>34</sup>) to finish off the roll of film. Then, probably during the following week, they took the film to the local drugstore<sup>1,8,35</sup> to have it developed. It probably took a week or more for the film to be returned<sup>35</sup>. The Trents showed the pictures to their family and friends, and, in particular, to a boyfriend of one of Mr. Trent's nieces<sup>12,36</sup>. This young man, Andy Horness, was in the Army and about to travel to Korea (he was killed on the way). He apparently took an interest in the photos and suggested that Mr. Trent take them to the local banker, Frank Wortmann, to find out if he might know what the object was. The banker, upon seeing the photos, called the local newspaper.

A slightly different version of how the banker happened to see the photos was related in a letter by Frank Wortmann to the late Dr. James McDonald. Writing to McDonald in 1969 Wortmann stated "it was several days later (i.e., after the photos were taken) that we heard of his picture, but he had not then had the film developed and we got him to have it cared for"<sup>37</sup> Mr. Trent himself, in a phone conversation with McDonald in 1969, said "(we didn't show (the pictures) around. (I) was talking to (my) local banker and he put it up in the bank window"<sup>38</sup> (reconstructed from notes made by McDonald while talking to Mr Trent on the phone<sup>36</sup>). At this late date it would be impossible to reconstruct the exact sequence of events that led to the publication of the photos.

On the same day that the banker saw the photos (June 7, 1950), Bill Powell, the reporter for the local newspaper was contacted. He went to the Trent farm and interviewed the Trents at length<sup>35</sup>. He also obtained the negatives which the children were playing with. Trent was reluctant to release the negatives for publication because he was afraid he would get in trouble with the government<sup>35</sup>. Powell apparently convinced Trent that there would be no problem. The interest of Horness, who was in the

Army, may also have had an effect on Trent's point of view. In one newspaper interview, when asked why he had delayed so long before saying anything about the photos, Trent responded that he was "kinda scared of it". He then said "I didn't believe all that talk about flying saucers before, but now I have an idea the Army knows what they are."<sup>10</sup>

Powell took the negatives back to the newspaper office and studied them as carefully as he could<sup>35</sup>. He could find no evidence of tampering with the negatives, so he made large blowups of the complete negatives and published them on the front page of the newspaper along with a brief story which appeared on June 8, 1950. It was at this point that the long Trent photo "saga" truly begins.

The combination of the clarity and detail of the photos with the public testimony of the banker that the Trents were honest people and with the statement by Powell that he could find nothing wrong with the photos (Powell was very convinced that the Trents would not have been able to carry off a hoax of this nature<sup>35</sup>) made the photos instant "celebrities". By the tenth of June the Trents' story was carried by the International News Service (INS) and was circulated throughout the USA and the world. Apparently the INS story was based on a second interview carried out by Lou Gillette, a reporter for the Portland paper.

Life Magazine became interested and included the pictures with a very short story of the sighting. Powell gave the negatives to Life with the understanding that the negatives would be returned to the Trents (who were never paid for the use of the negatives). The Trents also accepted an invitation to appear on a TV show, "We the People," which was produced in New York City. While on the show the Trents resisted efforts by the show staff to make statements which they, the Trents, considered unfounded<sup>1</sup>. They were also supposed to receive their negatives after the show, but the negatives were not returned<sup>1,12</sup>. The negatives were subsequently "lost" in the files of the INS in 1950, and were only found again as a result of the efforts of the Colorado research group in 1967. The negatives were found in the files of the United Press International (UPI) which had bought INS. After the Colorado group (i.e., Hartmann) finished with the negatives they were returned to UPI. Since the Trents had never been paid for the negatives, the editor of the McMinville News Register, Philip Bladine (he was also the editor

in 1950 when the paper was called the Telephone Register) wrote to UPI on behalf of the Trents to obtain the photos. UPI sent the negatives to Bladine in 1970, where I located them in 1975. (Bladine had the negatives, but hadn't informed the Trents!)

In retrospect it is probably a good thing that the negatives were "lost" between 1950 and 1967 because they were reasonably well protected during this time, and therefore the photographic information was only minimally degraded. Also in retrospect, it is interesting to contemplate the amount of money which UPI made from the Trent photos, which must have appeared in hundreds or thousands of UO publications since 1950, while the Trents received nothing but trouble and harassment (crank phone calls, letters, etc.) whenever their photos appeared in widely circulated publications. Over the years the Trents have received phone calls, letters and visits from people who have called them liars, hoaxers and other uncomplimentary names. They have also been contacted by "true believers" and "saucer nuts".

In my opinion Mrs. Trent has maintained a remarkable degree of equanimity in the face of all this notoriety. In all the conversations I had with her she never once referred to the object she saw as a flying saucer, nor did she try to convince me that flying saucers exist, nor did she say anything about alien contact, space brothers, or any of the saucer-related mumbo jumbo which we sometimes hear from people whose sightings have become famous.

#### Further Investigations

Apparently no reporters followed up on the Trent story after the visit by Lou Gillette on June 10 or 11, 1950. Since there were, at that time, no civilian UFO organizations in the area, there were no further civilian investigations into the sighting until many years later. The Trents have claimed that there was a brief government investigation, and that claim is backed in part by Bill Powell.

The first mention of a government investigation is in a letter from the late Frank Halstead (an astronomer) to Maj. Donald Keyhoe, former director of National Investigations Committee on Aerial Phenomena (NICAP)<sup>38</sup>. The letter of April 18, 1959 states that Halstead visited the Trents and "I spent about an hour with them

and they told me that the FBI came there and questioned them for several hours and some time later a man from the A.F. base from Denver, Colorado.... This man spent a considerable time with them asking but did answer their questions." (This is in contrast to the others who did not answer any questions.)

Halstead also offered to make a tape recording of the Trents' story. Dick Hall, formerly of NICAP, responded to Halstead's letter saying that NICAP would be very interested in getting a tape recording and "as a separate section of the tape a description of the interviews the Trents had with the two FBI agents and the Air Force officer"<sup>39</sup>. I don't know why Hall referred to "two" FBI agents--there is no written record of Halstead using such a number. Perhaps Halstead telephoned Keyhoe (or Hall) in relation to the interview and conveyed further information that way. (Note: apparently Halstead never did tape the Trents. As late as May, 1961 Halstead informed Keyhoe that he still intended to tape an interview with the Trents, but there is no such tape in the NICAP files.)

The next mention of possible government involvement occurs in two sources in 1967. Mrs. Trent told Look Magazine<sup>40</sup> that "Air Force officials investigated the sighting and took Geiger Counter readings but 'they didn't let us know anything'". The second source is the Portland Oregonian of Aug. 3, 1967 which says that Mrs. Trent reported that "two detectives" examined their house and furnishings after they reported the pictures. She didn't know why<sup>41</sup>.

In a 1969 phone conversation with Dr. McDonald, Trent was asked "what he thought it was" and he replied as follows "Thought it was something the Army was experimenting with. Don't say much about it now...because get so much fuss. FBI checked (us); came right out to where I was working and questioned (me). That was right at (the) time--1950, three weeks after it got out in the papers. (They) gave no reason. (They were) just talking to (me) but (they) showed FBI identification (papers)." (Reconstructed from telephone notes by J. McDonald<sup>24</sup>)

In numerous conversations with me, Mrs. Trent has recounted the story of "detectives" who visited the house while she was at home. I asked her "Was that during the day when you were home or something?"<sup>42</sup> She answered "Yeah, it was later in the day. I don't know...it was probably about 4 say, to 4:30 when he came in. Yeah, he

went through everything--everything. (her emphasis) and I don't mean maybe! He never stopped until he had everything spread out on the table." I asked her if the man said where he was from and she answered "No. He even went where my husband was at work, on the Alderblinn farm there. He asked all different questions there."

Mrs. Trent gave a rather graphic description of how the "detective" went through the drawers in the bureau of the house looking for something and generally making a mess of the place. She said she wasn't sure that the detective was from the FBI. She also said that there was another man, too, who spent some time outside the house as well as inside. Both men took lots of pictures. They were "throwing stuff up in the air'n taking pictures, 'n trying all different things like that too--garbage can lids 'n stuff like that, but they went all through it just to see what they could find, I guess. They didn't find nothin' but that's what they said they had to do--said it was their job--that's the way they worded it." Mrs. Trent did not recall whether or not they wore uniforms.

Although I have not been able to find any documents associated with an on-the-spot investigation by the Air Force, it would not be too difficult to imagine that one or more agents of the Air Force's Office of Special Investigations (AFOSI) did investigate the Trent sighting. During the period 1949-1951 the AFOSI was the agency charged with UFO sighting investigations for Project Grudge (which followed Project Sign and preceded Project Blue Book). There are no documents on the Trent case in the files of Project Blue Book other than responses to letters written in the mid 1960s for information on the case.

Lt. Col H. Quintanilla, Jr., who was in charge of Project Blue Book in the mid 1960s, wrote to P. Klass in 1965<sup>44</sup> "the Air Force never officially got involved in the analysis of this case. We don't even have a good print of the alleged vehicle". Actually, Project Blue Book must have had at least one print in 1966 because at that time Quintanilla requested an analysis of the photographs by the photo analysis branch, which did not provide an analysis, however.

Despite Quintanilla's answer to Klass, it is not impossible that the AFOSI investigated the sighting in 1950 and did not file a report with Project Grudge. A study of the microfilm record at the National Archives has shown<sup>45</sup> that not all

of the files of the AFOSI were entered into the Grudge or Blue Book records. For example, on roll 91 of the microfilm records<sup>45</sup> there is an AFOSI document entitled "Flying Saucer Photograph (taken by) Trent (of) McMinnville, Oregon". The spot intelligence report was filed in the records of the 19th AFOSI district office and a copy was sent to AFOSI headquarters in Washington, D.C., but no copy was sent to Project Grudge. (Therefore Quintanilla was not aware of it because it was not in the Grudge/Blue Book file of reports.) The date on the spot report is June 21, 1950. Apparently an agent of the AFOSI saw a newspaper article on that date in the Vallejo (California) News Chronicle. The newspaper article, which was included in the report, featured the Trent photos along with a very brief summary of the sighting.

The text of the spot intelligence report stated that "Sgt. Lawrence J. Hyder," of the 1704th Air Traffic Squadron, Fairfield-Suisa, Air Force Base in California, "advised this District that (Mr. Trent) and all the Trents are known to residents of McMinnville, Oregon as being substantial, solid, honest citizens of the community. Hyder stated that while he was home on leave, approximately June 8, his home town paper, the 'Telephone Register' published these photographs on the front page with the story that Trent stated the 'Saucer' was shining silver, made no noise or smoke, and shortly after disappeared over the horizon to the Northwest." There is no specific indication that the AFOSI took any action as a result of this report by Sgt. Hyder. However, I should point out that June 21 was almost three weeks after the photos had been published and that Mr. Trent told J. McDonald (in 1969) that the "FBI" men came "right out to where (I) was working and questioned me...three weeks after it got out in the papers."<sup>24</sup>

An independent statement about government involvement was made by a reliable source, Bill Powell, the newspaperman who originally published the Trents' story. Powell volunteered the information (without any question from me) in a phone conversation in 1976. Referring to copy negatives and prints which he had retained at the newspaper office (the original negatives had by this time been "lost" in the files of the INS), Powell said "Anyway the damn Air Force latched on to them and I never did get them back."<sup>35</sup> He went on to say that "they sent in a plainclothes (man) who "had the paper to do it" about "two weeks to a month" after the pictures were published. Note that this time period agrees with Trent's claim that he was visited about three weeks after the

pictures were published. Powell said that he wrote registered letters and sent telegrams to the Air Force but never got a response and never got the pictures back. Philip Bladine, the editor, wasn't in McMinnville on the day that Powell published the Trent photos, but he heard about the sighting when he returned. In a letter to P. Klasz, Bladine stated that, after the negatives were sent to Life magazine "they (Life) claimed the negatives were returned but we never received them"<sup>46</sup>. Bladine then said that he had "always been suspicious that they were confiscated by military people."

The military involvement was echoed in a somewhat distorted manner by Frank Edwards in an article<sup>47</sup> published in 1965. In 1950 Edwards was a radio commentator who had an interest in saucer sightings. Shortly after the Trent photos were published he had arranged with Bladine to send out free copies of the first page of the Telephone Register of June 8 (1950) to anyone who wrote for a copy. Edwards announced this offer during a radio program and, according to Bladine, the newspaper received nearly 10,000 requests for copies, and hundreds, or thousands of letters. Because of Edwards' interest in the Trent sighting and his arrangement with the newspaper, he was in close contact with it in June of 1950. According to Edwards<sup>47</sup> "the Air Force had picked up all the available prints from the McMinnville Tribune(sic), had 'borrowed' the original negatives from Life--and tried and failed to secure the two prints in my possession."

The statement by Powell, backed up by Bladine and Edwards, strongly suggests Air Force involvement between two and four weeks after the pictures were published. On the other hand, Trent claimed he was visited by FBI men. (Note: Mrs. Trent did refer to the visit of an Air Force officer who spent quite a long time talking with her, but this was much later than three weeks after the sighting).

In order to confirm or deny the claim that FBI investigators were involved I filed a request under the Freedom of Information and Privacy Act. I was informed that a search of the files at FBI headquarters in Washington D.C. failed to turn up any information on Mr. Trent. I learned that the FBI had been instructed to investigate reports officially during the summer of 1947. The agents had been instructed to discontinue official investigations, but to pass on any information they might acquire to the Air Force Office of Special Investigations<sup>48</sup>. Nevertheless, agents

continued to send "disc" related information to headquarters during the 1950s. I also learned from agents at FBI headquarters that local FBI offices may carry out investigations and have the option of sending or not sending the results of these investigations to headquarters as the local agents see fit. Thus it is possible that local agents might have investigated the Trents and, having found no evidence of subversive activity (the official investigation of 1947 had been directed toward the discovery of subversive activity), the local agents did not send the results of their investigation to headquarters. I learned from FBI headquarters also that, whereas the main office cannot destroy records, local offices can do so after five or ten years. There would no longer be any evidence of an FBI investigation, therefore, in any FBI files.

Thus it is not possible to refute Mr. Trent's claim that he was visited by FBI agents. If plainclothes Air Force agents had interviewed the Trents, they might have forgotten that they were Air Force agents and thought many years later (e.g., 1959, when questioned by Frank Halstead) that the men had been from the FBI because they did not wear uniforms. Note that Powell said the newspaper office was visited by a plainclothes Air Force investigator. If the Trents made an error in thinking they had been visited by the FBI, then their story would agree closely with that of Powell, and would suggest that the report by Sgt. Hyder caused the AFOSI to investigate (although no record of such an investigation has been found). On the other hand, if both the Trents and Powell are correct, both the FBI and AFOSI were involved.

#### On the Possibility of Other Witnesses

According to the brief story in Life Magazine of June 1950, "None of the Trents' neighbors saw (the) saucer."<sup>31</sup> No other witnesses were mentioned in the initial newspaper accounts, although the attempt to contact Mr. Trent's mother was mentioned in the Portland paper<sup>9</sup>. The first mention of other witnesses was made by Mr. Trent in a phone conversation with Dr. McDonald<sup>24</sup>. Mr. Trent said that his father saw the object as it was departing toward the west because he and his wife yelled to the father and mother to look.

Mrs. Trent told me she thought her mother-in-law might also have seen it. She also talked about another possible witness whose name was Chapin or Chaplain. Mrs. Trent could not remember the name exactly after so many years. According to Mrs. Trent,<sup>21</sup> Mrs. Chapin, with whom

she was not well acquainted, came to her one day after church several weeks (or months) after the photos had been published and said "You know that object that you guys saw and took a photo of--I think I saw the same object that same day you was (sic) talking about". And then I described it to her 'n' she said 'Yes, that's what it looked like. I just thought at first that it was just some parachute. After I read that in the paper, I knew good 'n' well that that was the same thing I saw'.<sup>9</sup> Of course I do not expect that these are the exact words of Mrs. Chapin, recalled by Mrs. Trent after about 26 years. However Mrs. Trent recalled the story told by Mrs. Chapin in a similar way several times over the several years that I talked to her. The description of the object as resembling a parachute may have been an addition to Mrs. Chapin's alleged account. Note that Mrs. Trent, in an original newspaper report, referred to the object as resembling "a goud-sized parachute canopy without the strings, only silvery bright mixed with bronze".<sup>9</sup>

Mrs. Chapin died in about 1970, according to Mrs. Trent, so she would still have been alive in 1967 when Hartmann could have interviewed her as part of his investigations. Unfortunately Hartmann never asked about other witnesses. McDonald

asked Mr. Trent about other witnesses in 1969, and Mr. Trent mentioned his father. He may not have known, or did not remember about Mrs. Chapin, since Mrs. Chapin had talked only to Mrs. Trent. Although McDonald talked to Mrs. Trent as well as to her husband, there is no evidence that he asked Mrs. Trent about other witnesses<sup>24</sup>.

In many conversations spaced over several years, Mrs. Trent repeated her claim about Mrs. Chapin (Chaplain). If she had been making the story up simply for my benefit to bolster the credibility of the sighting, she must have a remarkable memory for detailed falsehoods 21, 26,49,50.

#### Opinions of People Who Have Interviewed the Trents

Over the years many people have visited the Trents to ask them about their sighting. Others who know them or who know of them have offered opinions as to their truthfulness. For readers who have not conversed with either of the Trents I have listed the following opinions in chronological order of their interactions with the Trents.

PERSON	DATE AND NATURE OF INVOLVEMENT	OPINION
Bill Powell	June, 1950: wrote original story and published photos	"I think they (the photos) were authentic." The Trents were telling the truth. <sup>35</sup>
Frank Wortmann	June 1950: Trent's banker. He notified Powell about the photos.	Publicly vouched for Mr. Trent's veracity; <sup>8</sup> repeated his opinion in letters to McDonald <sup>37</sup> and Klass. <sup>51</sup>
Philip Bladine	June 1950: editor of the local paper. Knew the Trents, Powell and Wortmann.	Believed the Trents wouldn't fake the photos. <sup>52</sup> "We always figured it was legitimate." <sup>53</sup>
L.J. Hyder	June 1950: Air Force seargeant who provided information to the AFOSI.	The Trents were known to residents of McMinnville as "substantial, solid, honest" citizens. <sup>45</sup>
Frank Halstead	April 1958: retired astronomer who travelled around the country investigating sightings and sending information to NICAP	After an hour-long interview he gained the impression that the Trents were "very sincere people". <sup>38</sup>

PERSON	DATE AND NATURE OF INVOLVEMENT	OPINION
William Hartmann	1967: photographic case-investigator for the Colorado UFO study ("Condon Report")	From his description in the Condon Report and a statement to McDonald in a phone conversation it is clear that he was impressed by the Trents. <sup>1</sup> He also made it clear that he could not rule out the hoax hypothesis. Later he changed his mind about the validity of the sighting. <sup>6, *</sup>
James A. McDonald	1969-1970: atmospheric physicist at the University of Arizona and independent investigator of UFO sightings	"I find them to be the kind of people who could scarcely carry off an imaginative hoax or fabrication." <sup>54</sup>
Veikko Ilkonen	1969: film producer and director; interviewed and filmed the Trents for a UFO documentary that was shown in Europe	"The conclusions made by Dr. William K. Hartmann in the Condon Report ... are very close to the impressions we got during our visit to McMinnville and meeting with the Trent family." <sup>55</sup>
Arthur Fryer	Dec. 1976: retired high school science teacher in McMinnville who interviewed the Trents at my request	"No question in my mind that they weren't trying to hoax...she never called it flying saucer or UFO." <sup>56</sup>
B. Maccabee	1974-1977: physicist and UFO investigator; had 26 conversations with Mrs. Trent (some short, some long; most transcribed for later analysis)	I have never detected any tendency to hold back or distort information intentionally; differences in various retellings of the sighting and surrounding events seem to be no more than what one would expect of a person trying to recall events of more than 24 years before.

Although this list of people who have interviewed the Trents is doubtless too short, these are the people whose statements I have on record. Also of interest are the opinions of two independent investigators who analyzed a tape I made of a conversation with Mrs. Trent. The analyses were made by voice stress analysts using equipment constructed by the Dektor Corporation. One test was carried out by an employee of a security system company in Los Angeles (name on record<sup>57</sup>). The opinion of the chief examiner was "that the statements given by Mrs. Trent to the interviewer on this tape are true to the best of her knowledge." An independent study of the tape by C. Andrews of the Dektor Corporation led Ms.

Andrews to state that there was little or no detectable stress in Mrs. Trent's voice when she answered questions about the sighting, about other alleged witnesses, and about other subjects<sup>58</sup>.

Criticisms of voice stress analysis notwithstanding, the apparent lack of stress suggests that, at the very least, Mrs. Trent believes what she is saying. Perhaps if she were a pathological liar she could have avoided stress, but it would seem that at least one of the people who interviewed her personally over the years would have discovered that by getting her to make a statement which could be proven to be untrue.

\* W. Hartmann changed his opinion about the Trent case after reading Sheaffer's analysis (Ref. 7) which discussed three problems with the Trent photos. According to Sheaffer, (a) there are shadows on the wall which prove that the photos were taken in the morning rather than as the witnesses stated (in the evening); (b) one of the shadows moved on the garage wall between photos indicating a long time lapse between them

(minutes) rather than tens of seconds as the witnesses stated, and (c) veiling glare caused by grease on the camera lens could have made the UFO image in Photo 1 too bright, thus invalidating Hartmann's distance calculation. Points (a) and (c) were discussed at length earlier in this paper. Point (b) was found to be in error after the original negatives were carefully investigated and no shadow movement was detected.

## Discussion

The Trent photo case is a classic because of its age and also because the object is depicted so clearly that it is either a model (hoax) or it is an "extraordinary flying object" (to use Hartmann's phrase). It certainly is neither a bird, nor a plane, nor Superman. This case is also a perfect illustration of the fact that, when trying to prove something extraordinary is true, it is not sufficient to have clear photographs and several witnesses.

Ever since the photos were published, explanations have been offered by people who never spoke to the Trents.\* These explanations have often been based on imperfect or incomplete investigations. Unfortunately scientists were not interested in the case at the time that the photos were published, so the Trents were not interviewed in depth, the negatives were not carefully analyzed, and valuable data were lost forever. Even though data are lacking, it appears from the analysis presented in this paper (and in the earlier CUFOS paper<sup>4</sup>) that there is

no positive proof of a hoax. Rather, the available data, which do include a "life history" of the Trents since 1950, suggest that the sighting actually occurred as the witnesses claimed. The photos themselves, for reasons discussed earlier, are equivocal on the hoax hypothesis, although they strongly confirm the verbal statements if the case is not a hoax. Since the hard photographic evidence does not positively rule out the hoax hypothesis, the case will have to be resolved by studying the life history of the Trents since the sighting, and/or by a "confession".

The preponderance of the information collected and analyzed by this investigator suggests that the life style of the Trents is not compatible with assuming that their very "successful" photographs resulted from a hoax. Only a confession with a description of how the hoax was carried off would now convince me that Mr. Trent did not photograph a large, distant object, the intrinsic nature of which has not yet been established.

I thank all of the respondents to my requests for information, including especially Mrs. Trent, Philip Bladine, Arthur Fryer, Mrs. James McDonald, and Philip Klass. I also thank Brad Sparks for helpful comments on sighting directions to the UU in the two photos.

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## APPENDIX A

## Analysis of the Shadows on the Garage Wall

The images of the garage wall in both photos have been analyzed using a scanning densitometer to study the variations in brightness (density) of the images of the shadows under the garage eave. The densitometer scans have been done both "horizontally" and "vertically" on the images using scanning slits that are generally very small in the scanning direction (5-50 microns) and somewhat wider in the perpendicular direction (30-100 microns). The slit dimensions have been adjusted for each scan to maximize the signal-to-noise-ratio for a particular shadow image of interest in a particular scan. Representative densitometer tracings are presented in Figures A1, A2, and A3. Figure A1 is a "vertical" scan at 50X upwards under the eave near Rafter B (second from the right hand edge of the garage image). Figure A2 is a collection of similar scans at 10X at various places under the eave. Figures A1 and A2 illustrate data from photo 2; similar data from photo 1 are illustrated in Figure A3. The bottom half of Figure A3 also illustrates "horizontal" scans through the images of the ends of the rafters and also through the images of the shadows of the rafter ends in photo 1. The scans in the bottom half of Figure A3 give indications of the widths of the images of the ends of the rafters and also the widths of the associated shadows, as well as the brightness variations of the shadows. Figure A4 is a compilation of rafter shadow brightness data from photo 2. It is the result of the analysis of many parallel "horizontal" scans and it clearly illustrates that the shadows of the ends of the rafters get brighter (image density increases) as the distance downward below the eave increases.

As illustrated in Figure A1, the "horizontal" shadow under the eave does not have a steep brightness (density) gradient in moving upward from the portion of the wall which is fully illuminated to the portion which is fully shaded from the small, bright source of light which caused the shadows. Specifically with reference to Figure A1, we see that the gradient region is apparently about 0.8 mm wide on the original negatives (Figure A1 is magnified 50 times). This is contrary to what would be expected if the bright source were as small in angular size as the sun. If the source were the sun one would expect a very narrow gradient region. One main objective of the analysis presented in this Appendix is to determine just how narrow the gradient region would be if the source were the sun, and to compare that calculated gradient width with the measured width in Fig A1. Although the calculated width of the gradient will only be compared with one (very carefully made) densitometer tracing of the shadow under eave (Fig. A1), analyses of similar gradient region density data in photo 1 and photo 2 lead to similar conclusions: the width of the gradient region is wider than expected if the sun were the source.

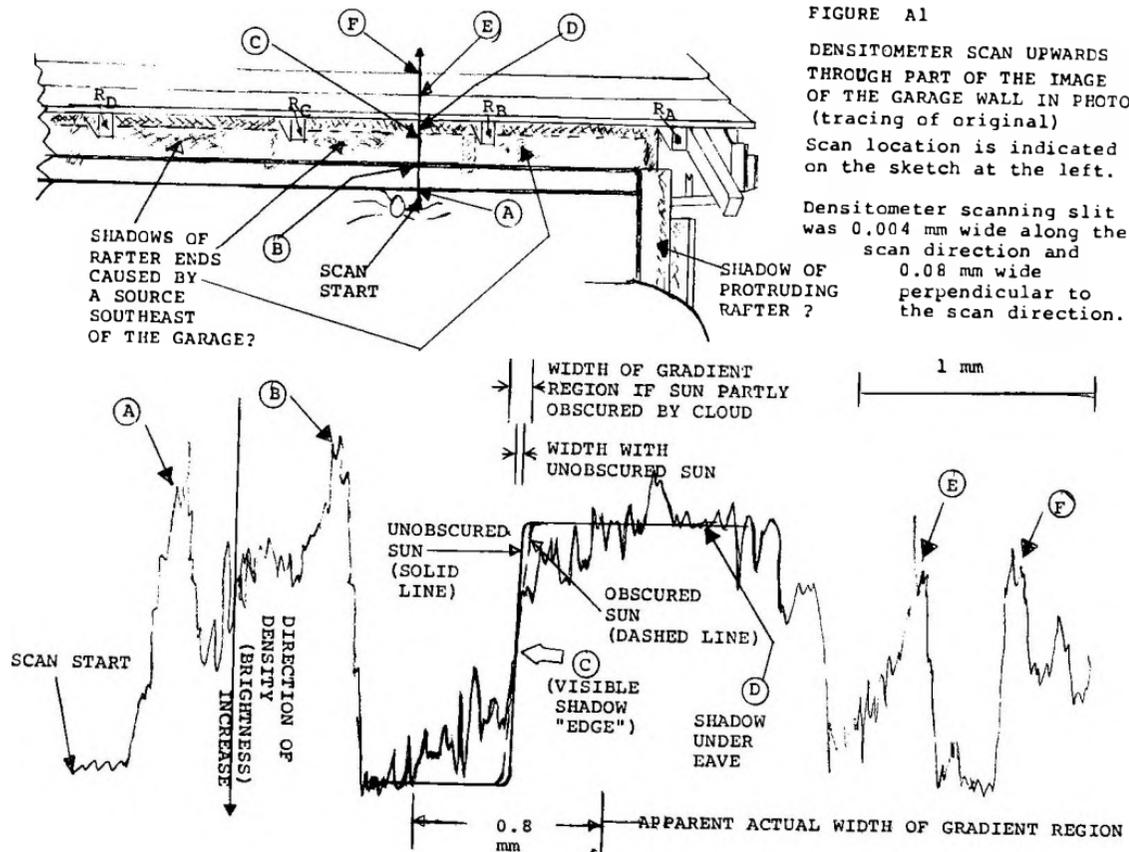


FIGURE A2

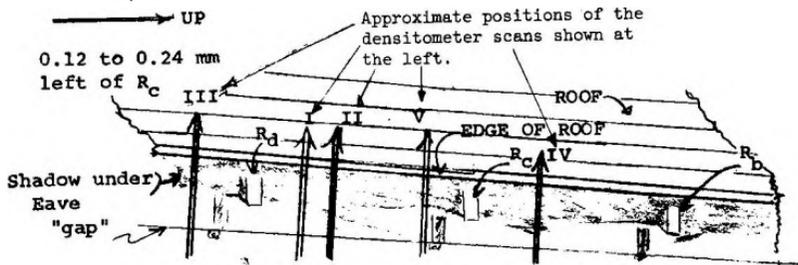
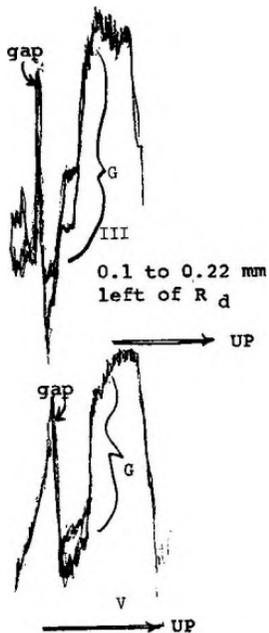
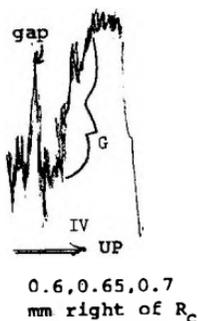
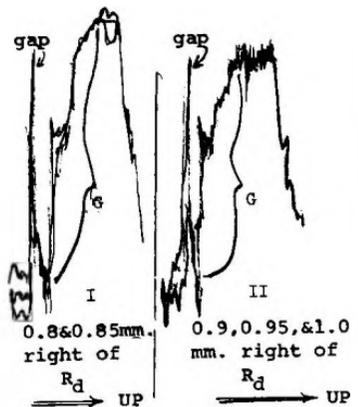
DENSITOMETER SCANS UPWARD  
ALONG THE GARAGE WALL IN  
PHOTO 2  
(10 X Magnification)

Horizontal scale: 1 cm =  
1 mm. of film  
Scanning slit width: 20 microns  
on scale of film

G - Gradient Region

Note that the shadow gradient region covers more distance to the right of  $R_d$  and  $R_c$  than to the left of  $R_d$  and  $R_c$ . This is indicative of the visible darkening of the wall board just below the eave to the right of  $R_d$  and to the right of  $R_c$ . See diagram below:

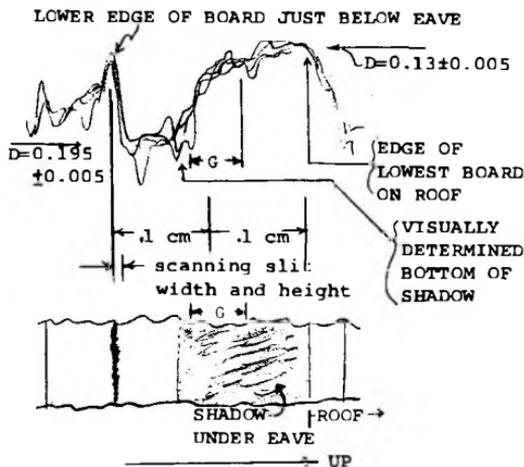
Note: "gap" refers to the dark shadow line between boards



*DM Aug 29, 1977*

FIGURE A3

SHADOWS IN PHOTO 1

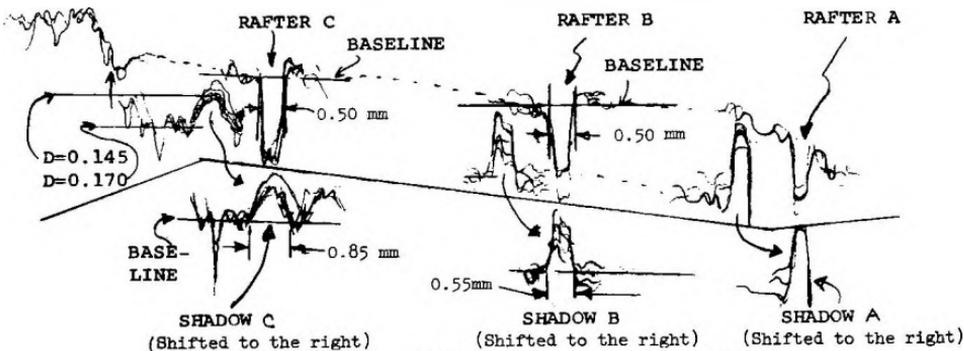


SHADOW UNDER THE EAVE OF THE GARAGE ROOF IN PHOTO 1 ABOUT  $0.185 \pm 0.002$  CM TO THE LEFT OF THE LEFT EDGE OF RAFTER B (SECOND FROM THE RIGHT)

Assuming  $\gamma = 0.6$  :  
 Brightness at  $D = 0.13$  is  $0.0063$  (relative)  
 Brightness at  $D = 0.195$  is  $0.012$  (relative)

G - Gradient Region

ENDS OF THE EAVE RAFTERS AND SHADOWS OF THE ENDS OF THE RAFTERS



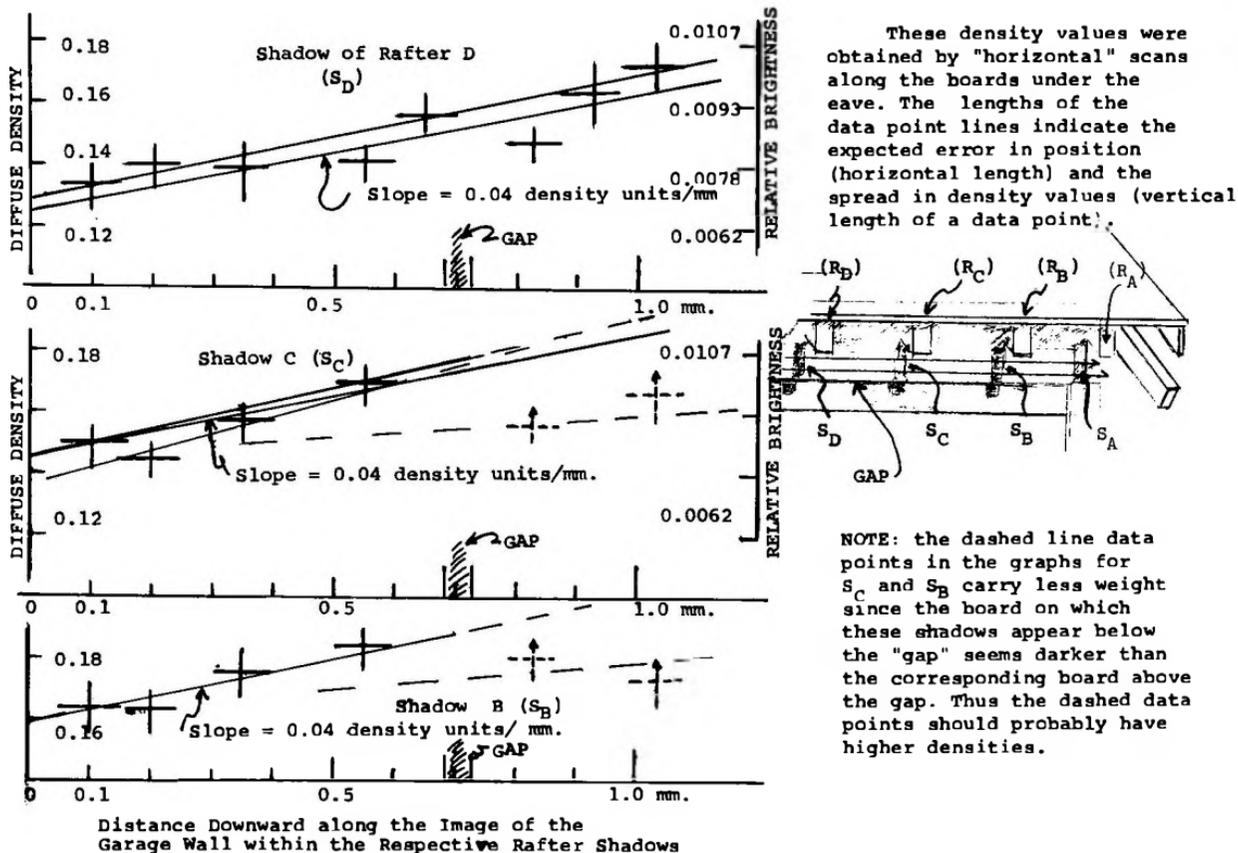
UPPER TRACES: SCAN ALONG GARAGE WALL AT THE LEVEL OF THE ENDS OF THE EAVE RAFTERS

1 mm  
slit

LOWER TRACES: SCAN ALONG THE GARAGE WALL AT THE LEVEL OF THE EAVE RAFTER SHADOWS (THE UPPER OF THESE TWO IS FOR DENSITY COMPARISON; THE LOWER IS FOR WIDTH COMPARISON)

For SHADOW C:  $D_{\max}=0.17$ ;  $D_{\min}=0.145$ ; Brightness ratio =  $0.01/0.0081 = 1.23$   
 For SHADOW B:  $D_m=0.2$ ;  $D_{\min}=0.19-0.17$ ; Br. ratio = 1.08 to 1.29

FIGURE A4 : DENSITY VARIATIONS OF THE SHADOWS OF THE ENDS OF THE EAVE RAFTERS  
(PHOTO 2 DATA)



Calculation of the Expected Width of the Gradient Region  
if the Sun made the Shadows on the Garage Wall

Using geometric optics (see the sketch at the right) one can show that the width of the gradient region of the shadow caused by a source of angular size  $A$  in degrees, when projected past an edge to a surface at a distance  $R$  in meters from the edge is given by

$$W = 2R \text{ TAN}(A/2) \quad (\text{A-1})$$

where TAN is the tangent function from trigonometry. Note that the brightness or illumination on the surface increases in a continuous manner from the fully shaded region to the fully shaded region. The exact shape of the brightness gradient curve depends upon the shape of the light source. For our purposes here, we ignore the shape of the gradient region because various instrumental effects have doubtless modified its image on the film. To make the comparison with the size of the gradient expected if the sun were the source it will only be necessary to estimate the total width of the gradient region, and not the exact shape of the brightness gradient curve.

The shadow under the eave of the garage roof has a brightness gradient with a width determined by the angular size of the sun,  $0.53^\circ$ , and by the distance from the edge of the roof to the wall measured along the optical path from the sun to the wall. Since the light source was at an angular elevation of  $B^\circ$  above horizontal, the distance from the edge to the wall is

$$R = L/\text{COS}(B), \quad (\text{A-2})$$

where COS is the cosine function. There is one further addition to Equation (A-1) which accounts for the fact that the vertical wall surface is not perpendicular to the light rays. This makes the width  $W$  slightly greater than if the wall surface were perpendicular to the light rays.

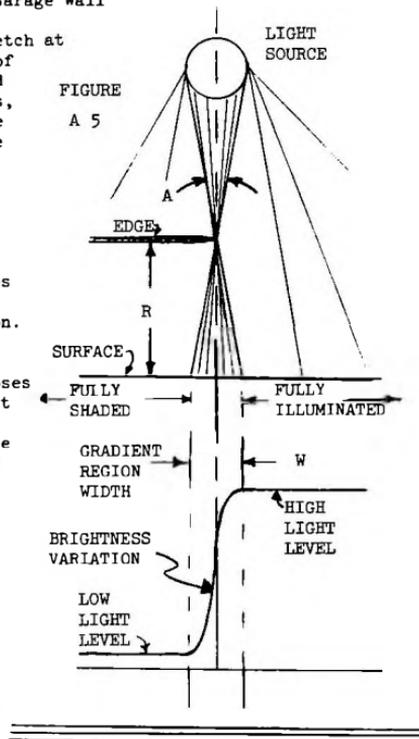
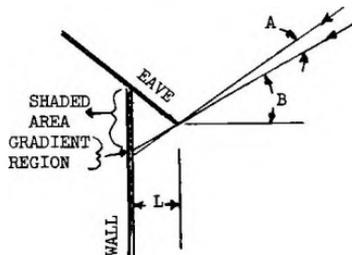


FIGURE A6



This addition results in the following equation for  $W_T$ , which is the width of the gradient on the Trent garage wall:

$$W_T = W / \cos(B) = 2 L \tan(A/2) / \cos^2(B). \quad (A-3)$$

The distance of overhang of the roof beyond the wall is not known, but a reasonable estimate based on standard construction is 6 - 12 inches. Choosing 10" as the distance, L, and with  $B = 16^\circ$  and  $A = 0.53^\circ$ , the width of the gradient region if the sun were the source would be

$$W_T^S = 0.10 \text{ inches} \quad (A-4)$$

To relate this width on the garage wall to the width of the gradient region in the image of the garage wall it is necessary to make use of the geometric relation between object sizes and image sizes that is established by the (focused) camera optics:

$$\frac{W_T}{D_C} = \frac{I_W}{F} \quad (A-5)$$

where  $W_T$  is the width of the gradient region regardless of what the light source was,  $D_C$  is the distance from the camera to the garage wall,  $I_W$  is the width of the image of the gradient region, and  $F$  is the camera focal length. In Appendix B I have shown that the camera was approximately 30 ft from the corner of the garage. As pointed out in the text, the camera focal length was about 103 mm. Therefore, using 30 ft = 360 inches, the width of the image of the gradient region, if the light source were the sun, would be

$$I_W^S = F W_T^S / D_C = 103 (0.1/360) = 0.0286 \text{ mm}. \quad (A-6)$$

Now look at the brightness gradient curve in Figure A5. Note that the width of the gradient region is the distance from the edge of the low light level region to the edge of the high light level (unshaded) region. Thus the width  $W_T^S$  can be found by measuring, on the image of the gradient region, the distance from the maximum brightness area to the minimum brightness area. Now look at Figure A1. There I have indicated the expected gradient curve if the sun were the source (unobscured sun--solid line) along with the measured gradient width of about 0.8 mm. Of course the gradient width which one would measure on the densitometer scan graph depends upon where one places the maximum and minimum brightness levels (the unshaded and shaded brightness levels). If we allow for the possibility that the brightness levels as indicated (solid horizontal lines) should be moved closer together, then the gradient width region would be reduced. Perhaps a width as small as 0.3 mm would be barely consistent with the densitometer data. Using this as a minimum measured value we can write the following equations for explicit comparison of predicted and measured widths:

$$I_W^S = 0.029 \text{ mm (approx)} \quad (A-7A)$$

$$\text{and } I_W^T = 0.3 \text{ to } 0.8 \text{ mm (approx)} \quad (A-7B)$$

where  $I_W^T$  is the width of the image of the gradient region on the Trent photos.

Effects of Cloud Cover on the Brightness Ratio  
and on the Effective Angular Size of the Sun

The calculation just completed makes it clear that the shadow of the edge of the roof could not have been made by the unobscured sun, which has an effective angular size of  $0.53^\circ$ . However, the relative brightnesses of the fully illuminated and fully shaded regions are not very different, which suggests that if the sun were the light source, it was partially obscured by clouds.

More specifically, when the sun is not obscured by clouds the brightness of a shaded area (such as that beneath the roof of the Trent garage) is less than 1/20 of the brightness of a fully illuminated area (such as the wall of the Trent garage below the edge of the shadow). As thin clouds gradually obscure the sun the brightness of the fully illuminated area drops rapidly, while that of the shaded area (which is illuminated by skylight and light reflected from the ground) drops relatively slowly, so that the ratio of the brightness of the illuminated area to the brightness of the shaded area drops as cloud cover increases.

In the Trent photos the ratio of the brightness of the illuminated area of the garage wall to the brightness of the shaded area under the eave is about 1.75, whereas the same ratio would be greater than 20 if the sun were the source, and if it were unobscured. Thus I conclude that if the sun were the source, it must have been partially obscured by clouds.

The question then arises as to whether or not the effective angular size of the sun is effected by the presence of clouds. Specifically, forward scattering of light by ice crystals in the clouds may make the sun appear to be larger in angular size than it actually is. To answer this question I did some experiments in which I made a "model" of the garage wall and used a scanning illuminometer (which measures the relative amount of light incident on a surface) to scan through the shadow gradient region created by the edge of the eave of the model garage. These and other experiments suggest, but do not prove (because of instrumental problems which are rather complicated) that the effective angular size of the sun does increase somewhat as cloud cover increases. Figure A7 illustrates the experimental results. As the brightness ratio,  $R_B$ , decreases toward unity (when the sun is completely obscured and there is no "shadow"; the whole wall surface is illuminated only by skylight and ground-reflected light) the relative effective solar diameter,  $K_S$ , increases, perhaps reaching a number as high as 3. For  $R_B = 1.75$ , which is the value measured on the Trent photos, Figure A7 shows that  $K_S$  may be as large as 2.5 - 3, meaning that the effective angular size of the sun might be as large as  $2.5 \times 0.53^\circ = 1.33^\circ$  to  $3 \times 0.53^\circ = 1.59^\circ$ . However, these measurements must be treated cautiously since instrumental effects and problems with the analysis of the scanning illuminometer data may have made the angular size ratios in Figure A7 too large.

However, assuming the data of Figure A7 are correct, one can repeat the calculation leading to the expected image size in Equation (A-6). Using  $1.33^\circ$  to  $1.6^\circ$  as the effective angular size of the sun yields

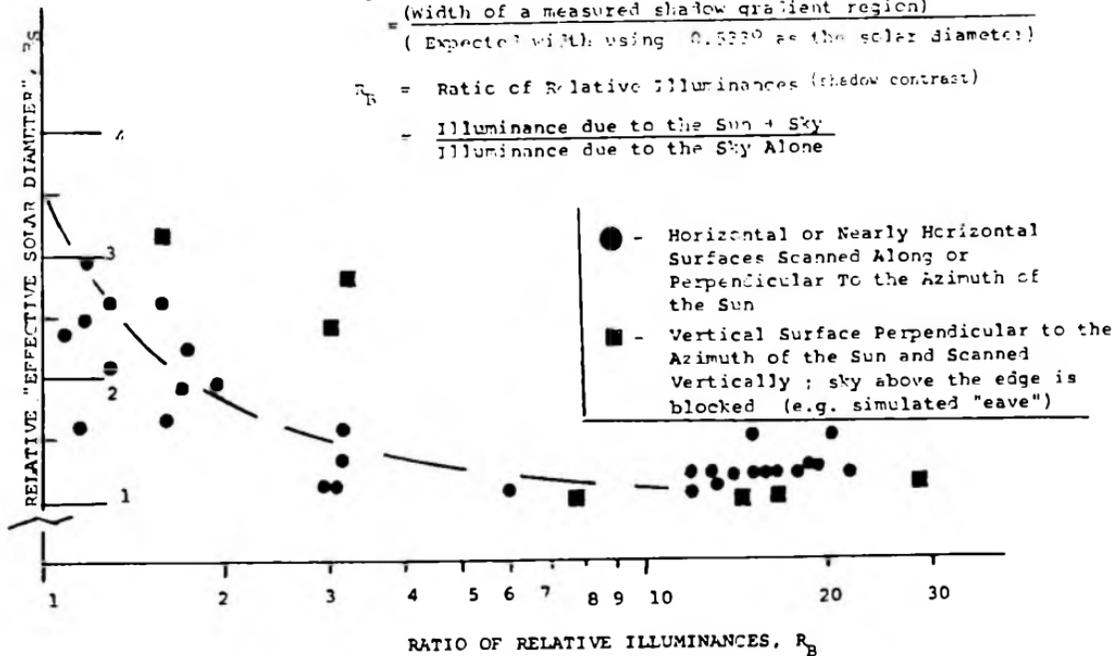
FIGURE A7

DEPENDENCE OF THE "EFFECTIVE SOLAR DIAMETER" ON THE RELATIVE ILLUMINANCES  
ON EACH SIDE OF A SHADOW GRADIENT

(Cautionary note: the experimental method may have overestimated the growth in angular size as the shadow contrast decreases.)

$$R_S = \text{Relative "Effective Solar Diameter"} \\ = \frac{\text{(width of a measured shadow gradient region)}}{\text{(Expected width using } 0.533^\circ \text{ as the solar diameter)}}$$

$$R_I = \text{Ratio of Relative Illuminances (shadow contrast)} \\ = \frac{\text{Illuminance due to the Sun + Sky}}{\text{Illuminance due to the Sky Alone}}$$



$$\frac{I_S}{W} \text{ Maximum} = 0.072 \text{ to } 0.086 \text{ mm.} \quad (\text{A-8})$$

These values are still about four times lower than the minimum estimated gradient width on the Trent photos, 0.3 mm.

Therefore, it appears that, even allowing for the possibility that cloud cover increased the effective angular size of the sun ( a hypothesis which may be totally unique to the research reported here, I might add), the light source which made the horizontal shadow of the edge of the garage roof had a vertical angular size that was four or more times greater than the vertical angular size of the sun. By reversing the procedure and using Equations (A-3) and (A-5) to calculate the angular size of the source in the vertical direction, one finds that the source had an angular size of more than  $5^\circ$ , depending upon whether the gradient region width on the image is taken to be 0.3 mm or larger.

The low brightness contrast and the corresponding large gradient region widths of other portions of the horizontal eave shadow confirm the conclusion that the light source was not as bright as the unobscured sun, and had a vertical angular extent of  $5^\circ$  or more.

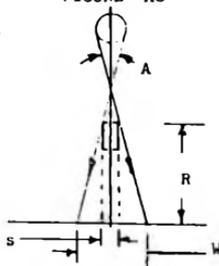
Beside the vertical extent of the light source, which was determined by looking at the horizontal shadow made by a horizontal edge (the edge of the roof), it is also possible to make an estimate of the horizontal extent of the light source by looking at a vertical shadow, such as is made by the vertical sides of the ends of the eave rafters. There are four shadows made by the ends of the four rafters (only three appear in photo 1). Figure A3 illustrates densitometer scans that were made in a "horizontal" direction through the ends of the rafters and also through the shadows of the ends (lower half of Fig. A3). Figures A2 and A4 contain illustrations of the ends of the eave rafters and of their associated shadows.

Figure A3 shows the rafter shadow densitometer traces at the left of their associated rafter end traces, and it also shows the rafter shadow traces below their associated rafter end traces. Of particular interest are the relative sizes (widths) of the rafter end tracings and the shadow tracings. The relative widths can easily be compared by eye by comparing the width of a particular shadow tracing that has been shifted to the right (see notations on Figure A3) with its associated rafter end tracing just above it. In general the widths of the shadows appear to be slightly greater than the widths of the rafter ends. This is to be expected if the light source has a finite angular size (is not a source of zero angular size)

as illustrated in the sketch at the right. With a source of angular size  $A$ , the end of the rafter of width  $s$ , and the distance from the rafter end to the wall equal to  $R$ , the total width of the shadow, from the left end of the penumbra to the right end of the penumbra is given by

$$\begin{aligned} W &= 2((s/2) + R \text{TAN}(A/2)) \\ &= s + 2R \text{TAN}(A/2) \end{aligned} \quad (\text{A-9})$$

FIGURE A6



If we again use ten inches as the distance of the rafter end from the wall, include the  $\text{COS}(\theta)$  factor to account for the fact that the light source is at an angular elevation of about  $16^\circ$ , assume the source is the sun ( $A = 0.53^\circ$ ), and assume that the end of the rafter is 1.5 inches wide (standard for a so-called "2 x 4"), the total width of the shadow would be

$$W = 1.5" + 2(10)\text{TAN}(0.53/2) / \text{COS}(16^\circ) = 1.60" \quad (\text{A-10})$$

This assumes an unobscured sun. If we allow for the possibility that the effective angular size of the sun had grown by a factor of three the total width becomes 1.78". Thus the total width of the shadow of a rafter end is in the range

$$W_{\text{r.e.}}^S = 1.6 \text{ to } 1.8 \text{ inches} \quad (\text{A-11})$$

Thus, if the sun were the source the maximum width of the shadow of a rafter end would be about  $(1.6/1.5) = 1.07$  to  $(1.8/1.5) = 1.20$  times bigger than the width of the rafter end. Correspondingly, the width of the image of the shadow would be 1.07 to 1.2 times greater than the width of the image of the rafter end. Therefore, in order to determine whether or not the sun made the shadows of the rafter end it is only necessary to compare relative sizes of the shadow and rafter end images.

Referring to Figure A3 we see that for rafter C the ratio is  $0.825 \text{ mm} / 0.50 \text{ mm} = 1.65$  (using the average between 0.80 and 0.85 mm as the width of the shadow). For rafter B the ratio is  $0.55/0.50 = 1.10$ . Similar measurements using densitometer scans for Photo 2 yield for rafter D,  $(0.55/0.50) = 1.10$ ; for rafter C,  $(0.70/0.40) = 1.75$ ; and for rafter B,  $(0.60/0.40) = 1.50$ . (The comparable data using rafter A and shadow A have not been used since shadow A is at the edge of the garage wall and so part of the shadow may have extended beyond the wall where it could not be registered by the camera. See Fig. A4.) The average of these ratios is 1.42, which is noticeably larger than the largest expected value of the ratio if the sun were the source.

The large variability in the measured ratios, ranging from as low as 1.1 to as high as 1.75 are indicative of the experimental problems with measuring the widths of images as small as those of the rafter ends and of the shadows of the rafter ends. In particular, the contrast between the brightness of the shadows and of the adjacent illuminated wall is so low that photographic noise plays an important role in determining the "edges" of the images of the shadows. Another important factor in determining the locations of edges is the finite aperture (slit) size of the scanning densitometer, which tends to blur out very fine details. However, after taking these effects into account it seems that the photographic data do indicate a light source larger in horizontal angular extent than the sun.

By reversing Equation (A-9) to find A, and using  $K = W/s$ , it is possible to find A using the calculated values of K given above:

$$A = 2 \text{TAN}^{-1} ( s (K-1)/2(R) ) \quad (\text{A-12})$$

With  $s = 1.5"$ ,  $R = 10"$ , and  $K = 1.42$  this yields  $3.6^\circ$ , which is much

larger than the effective angular size of the sun could ever be. Even the lowest ratio values found, 1.10, correspond to an angular size,  $0.86^\circ$ , which is greater than that of the unobscured sun ( $0.53^\circ$ ).

#### Other Darkened Areas Under the Eave: Possible Other Shadows

Besides the very apparent horizontal shadow of the edge of the roof and the shadows of the eave rafters, there are other darkened areas of the board under the eave. These darkened areas are on the right hand sides of rafters D, C and B. They look like what one might expect if there were a bright source southeast of the garage causing shadows of the ends of the eave rafters to appear on the board just under the eave. This hypothetical "southeast source" would have been less bright and/or much larger in angular size than the source which made the shadows which I have discussed in previous sections of this appendix. On the photos these other "shadows" extend to the right for a considerable distance from rafter D and from rafter C, and for only a short distance to the right from rafter B. They are illustrated in Fig. A1. If they are not shadows but "anomalous" darkenings of the board for some other reason, then they just happen to be remarkably consistent with what one might expect if there were a source southeast of the garage as well as a brighter source east of the garage. Needless to say, if the sun were the main source east of the garage it seems inconceivable that there could be another source southeast of the garage that could be bright enough to create shadows, even if the sun were partially obscured by a thin cloud. Thus these other darkened areas argue against the sun as the source which was east of the garage. On the other hand, there would be no problem with having two clouds at sunset causing shadows on the garage, since the clouds would have been of comparable brightness.

On the other hand, there is one further darkening of a board which appears to be a shadow that would require the source east of the garage to be very small indeed. This darkening runs downward along a vertical board at the corner of the garage (see Fig A1 and the notation "Shadow of Protruding Rafter?"). This "shadow", although visible in prints, is much fainter than the shadows of the ends of the eave rafters (that is, there is less contrast between the brightness of this shadow and the illuminated board adjacent to it than there is between the brightness of a shadow of a rafter end and the illuminated board adjacent to it). It seems that the width of this vertical shadow increases with an increase in distance downward along the board. Such an increase would be consistent with a source larger than the sun, but the shadow is so faint that it would be difficult to say just how much wider than the sun.

#### Conclusion

It appears that things may not be what they appear to the "naked eye". Careful analysis of the shadows under the eave suggest that they have characteristics that are incompatible with the sun-shadow hypothesis, but not necessarily incompatible with a hypothesis which includes one or more bright clouds in the sky east (and southeast?) of the wall at sunset. As pointed out in the text of this report, cloud-produced shadows have been observed (and photographed).

## APPENDIX B

## Photogrammetric Estimate of the Location of the Overhead Wires Relative to the Sighting Lines to the UO in Photos 1 and 2

By estimating or guessing at the dimensions of certain objects which appear in the Trent photos it is possible to reconstruct the relationships between the cameraman and the overhead wires. Once the locations of the wires and of the cameraman are determined, the sighting lines to the UO can be added and it is then possible to estimate the answers to two questions: (a) do the sighting lines cross under the wires, and (b) calling the point where the sighting lines cross SLC, is the ratio of the distances of the camera from SLC in photos 1 and 2 the same as the ratio of the image sizes in photos 1 and 2? It is the objective of this appendix to present evidence which can answer these questions.

The first problem is to locate the camera positions for the two photos. Unfortunately Hartmann did not record any measurements at the time he visited the house, and since both the house and garage are now gone it is necessary to determine these positions from photographic data alone. Surprisingly, these positions can be determined rather accurately by using the garage wall as a source of data. Specifically, the rafter ends of the garage wall are located as to azimuth angle (that is, the angle left or right) in the two photos and these angles are projected backward from the rafter ends to the locations of the camera. Further information comes from the known standard size of the largest pipe which protrudes upward from the tank (the filling pipe). Necessary data are as follows:

Quantity	PHOTO 1	PHOTO 2
	Directions	
Center of Photo	-26.6° (26.6° west of north)	-39.3°
Direction to UO	-25.6	-42.9
Direction to Rafter A (R <sub>A</sub> )	-41.4	-50.1
Direction to Rafter B (R <sub>B</sub> )	-43.9	-52.6
" " " C (R <sub>C</sub> )	-46.8	-55.5
" " " D (R <sub>D</sub> )	-----	-58.5
Corner of Main House	-5.4°	-18.9°

## Estimates Related to the Lower of the Two Overhead Wires

Left Side of Picture:		
Distance from Lens Axis	23.9°	21.9°
Elevation above Horizontal	24.1°	19.2°
Brightness Halfwidth*	0.140 mm	0.12 mm
Middle of Picture:		
Distance from Lens Axis	11.3°	8.5°
Elevation above Horizontal	22.8°	20.0°
Brightness Halfwidth*	0.144 mm	0.128 mm
Right Side of Picture:		
Distance from Lens Axis	22.8°	22.8°
Elevation above Horizontal	24.1°	23.0°
Brightness Halfwidth	0.148 mm	0.138 mm

\* Wire diameter measurements are illustrated in Figure B1. The brightness halfwidth is the image width at one half the maximum brightness variation between the image of the wire and the sky background.

Quantity	PHOTO 1	PHOTO 2
Width of the Image of the Filling Pipe at the Top of the Tank	$0.84 \pm 0.05$ mm	$0.79 \pm 0.02$ mm
Angle from the Lens Axis to Pipe Image	$22^\circ$	$18^\circ$

The photogrammetric reconstruction proceeds as follows:

- 1) Choose a spacing for the eave rafters. I chose 2'. The actual spacing may have been less, but probably it wasn't greater. The ends of the roof rafters, assumed to be standard "2 x 4" rafters, are 1.5" wide. The ratio  $24"/1.5" = 16$  is the same, to within experimental error as the ratio of the widths of the images of the ends of the rafters to the spacing between the images of the ends of the rafters, indicating that the photographic evidence is consistent with the assumption of a 2' spacing.
- 2) Assume the garage wall runs due north-south. Actually the direction might be several degrees off, but the Trent house was built next to a road which runs due east-west according to the U.S. Geological Survey Maps (7.5 minute series). Thus the walls of the house and garage, which would have been nearly parallel or perpendicular to the road, probably are close to running due north south or due east west, depending upon the location of the wall. The east wall of the garage appears in the photos, according to Hartmann.
- 3) Draw the eave rafters two feet apart along a north-south line on a scaled map. (See Figure B2, where  $1" = 4'$ , or a scale ratio of 1:48.) Let the eave rafter extend 1' beyond the wall.
- 4) Draw lines from the rafter ends in directions opposite to the directions listed in the above table. For example, for Rafter A in photo 1 draw a line at azimuth  $-26.6 + 180 = 153.4^\circ$ ; for Rafter A in photo 2 draw a line at azimuth  $-39.3 + 180 = 140.7^\circ$  (measured clockwise from due north on the map, with the line starting at the rafter end). The intersections of the lines locate (approximately) the camera positions from photos 1 and 2. (See Figure B2.)
- 5) The filling pipe on the tank appears in both photos. Its image size is directly related to the distance to the camera. Standard filling pipes have outer dimensions of 2.375". Oil tanks are typically 27" wide. Allowing 3" for a spacing between the side of the tank and the garage wall places the filling pipe about  $(27 + 3)/2 = 15"$  from the wall, or about 3" beyond the eave rafters. To locate the filling pipe in its proper north-south location, proceed as follows: note that the image of the pipe appears just below the image of the shadow of  $R_C$  in photo 1. Assuming that the light source is due east of the garage, the shadow would be due west of the end of the rafter. This locates the shadow of  $R_C$  on the garage wall. Draw a line from the garage wall just west of  $R_C$  (where the shadow is) toward the general location of the camera in photo 1, as determined in step 4 above. Now mark a location along this line which is  $15" = 1.25'$  from the garage wall. This locates the (estimated) position of the filling pipe.
- 6) The distance from the filling pipe to the camera is given by

$$D = ((F/\cos(\theta))/i)(w/12) \quad \text{in feet} \quad (B-1)$$

where  $F = 103$  mm,  $\theta$  is the angle from the axis of the lens to the image of the pipe, and  $w$  is the actual pipe width in inches. The  $\cos(\theta)$  factor is needed to account for the fact that the effective focal length is not constant over the whole film plane because the film plane is flat (not a constant distance from the center of the camera lens). Using the appropriate values of the quantities 1 and  $\theta$  from the table, with  $F = 103$  mm yields  $D = 26.1$  ft for photo 1 and  $D = 27.1$  ft. for photo 2. In each case the possible error is  $\pm 1.5$  ft.

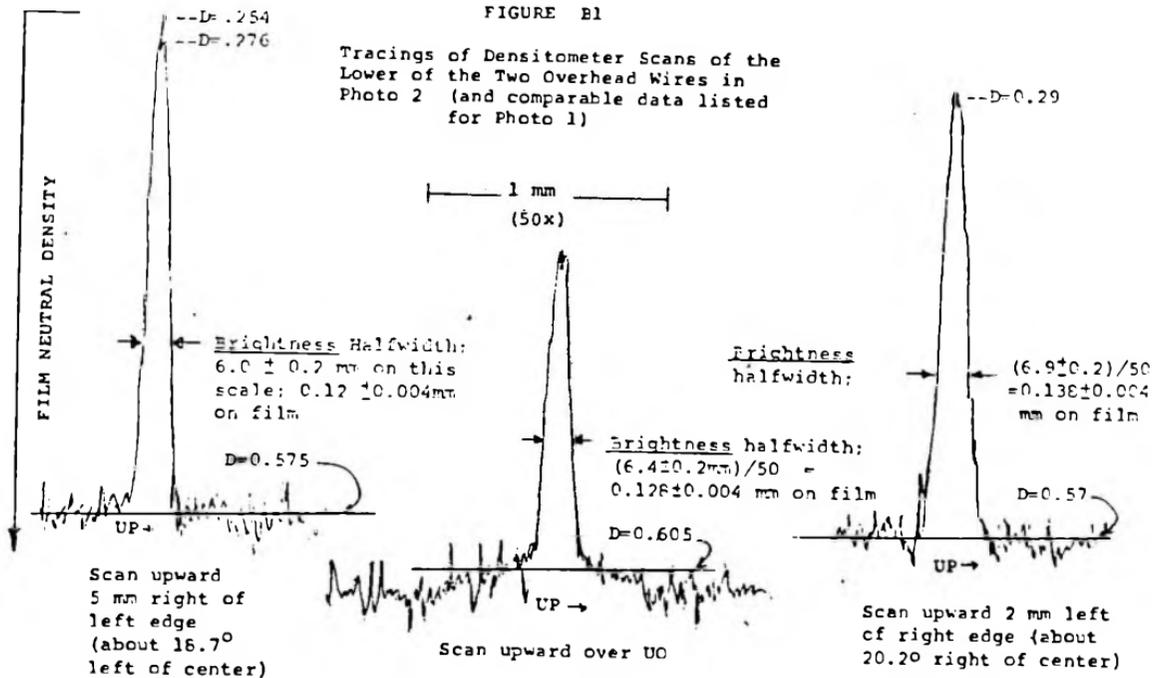
- 7) Draw the distance ranges just calculated from the pipe in the appropriate areas on the map where the sighting lines from the rafter ends cross, thereby further locating the positions of the camera.
- 8) As a further check, using data not listed in the table, mark off distances from the corner of the garage according to the fact that the ratio of distances to the corner should be the same as the ratio of the spacings between the images of the cracks between the boards on the garage wall at the corner of the garage. This ratio is about 1.1 after correction for the fact that the corner of the garage wall is somewhat to the left of the center of the lens in each photo ( $\cos(\theta)$  correction mentioned above). Pick one camera position to be "exact" and set the other position 1.1 times farther from the corner of the garage wall. I chose position 1 to be 30' from the corner of the wall (26.5 ft from the filling pipe on the tank), and this "forces" position 2 to be 33' from the corner and also about 30' from the filling pipe. Since this is too far from the filling pipe I have compromised on a distance of 32' from the corner, which is 29' from the filling pipe, a distance only 1/2 ft. greater than the maximum value calculated in step 6.
- 9) Place the lower of the two overhead wires on the map by assuming a wire diameter such as 3/16" or 1/8". Do this by using the image brightness Halfwidths in the formula given in step 6 to locate the left end, middle, and right end of the wire from the camera positions for photos one and two. The angular "Distances from the Lens Axis" given in the table should be substituted for the angle  $\theta$  in the formula. The formula then gives radial distances from the camera ("slant distances"). To convert to horizontal distances appropriate for plotting on the map, use the angles listed as Elevation above Horizontal in place of  $\theta$  in the following formula:

$$H = D \cos(\phi). \quad (B-2)$$

When the distances have been calculated place marks on the map corresponding to the left end, middle, and right end positions for both 3/16 and 1/8" diameter wires. Note that each photo provides an estimated position. I have drawn average lines through the locations provided by photos 1 and 2 for both 3/16 and 1/8" diameter wire.

- 10) Locate the corner of the front house by drawing lines from the camera positions according to the angles given in the table.

The above steps yield a map similar to that in Figure B2. The final step is to draw in sighting lines from the camera positions according to the data in the table.



Note: on this scale 5 cm = 1 mm.; the scanning slit was 10 microns wide and 1.1 mm "high" on the scale of the film; the long dimension of the slit was accurately parallel to the wire.

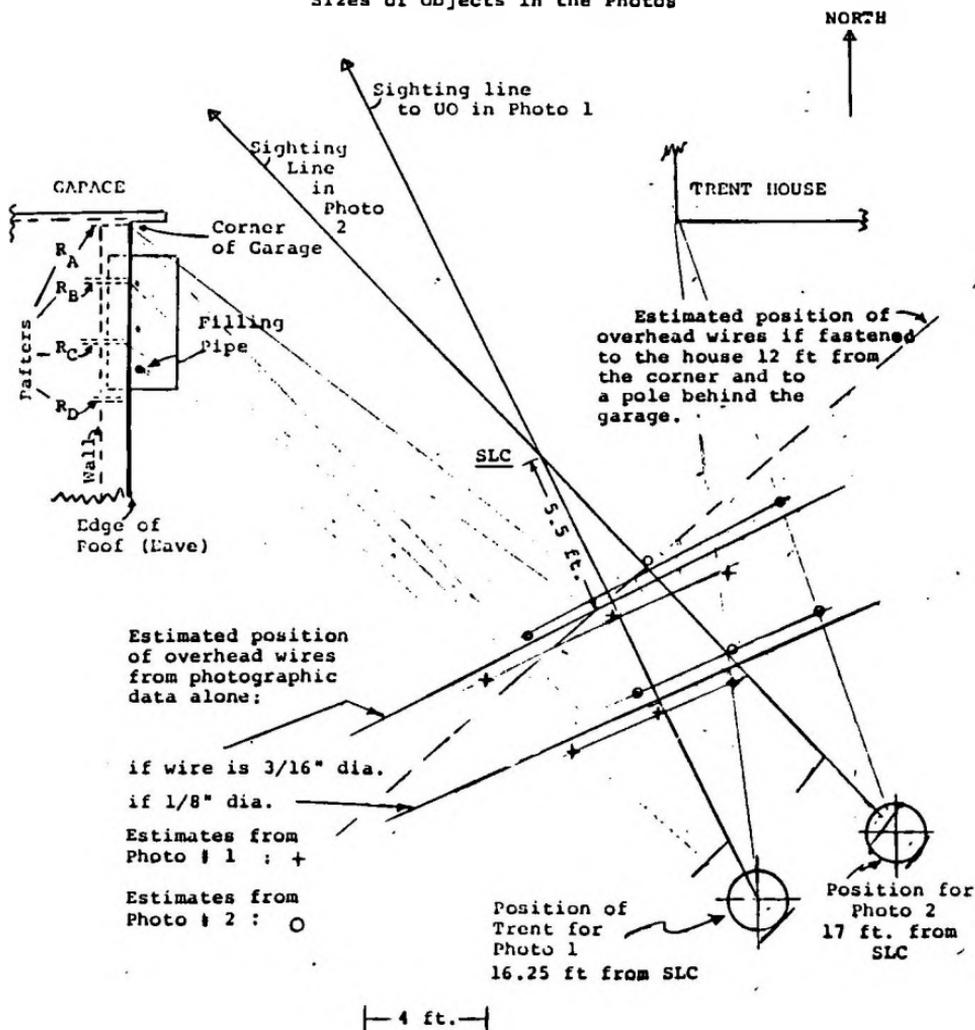
Note: comparable measurements on photo 1 yield: left side- brightness halfwidth =  $(7 \pm 0.2 \text{ mm}) / 50 = 0.14 \pm 0.004$  mm on film; middle (over UO pole) -  $0.144 \pm 0.004$  mm wide on film; right -  $0.148 \pm 0.004$  mm wide on film

45

Nov 4, 1981  
3:11 PM

FIGURE B2

Reconstruction of the Sighting Area  
from Photographic Data and "Known"  
Sizes of Objects in the Photos



First notice that the sighting lines do not cross under the wire if the wire was not larger than 3/16" diameter. Second, note that the ratio of the distances from the Sighting Line Crossing (SLC) to the camera positions is

$$\frac{16.25 \text{ ft for photo 1}}{17.0 \text{ ft for photo 2}} = 0.956 \quad (\text{B-3})$$

This is to be compared with the ratio of image sizes of the UO:

$$\frac{\text{UO diameter in photo 2}}{\text{UO diameter in photo 1}} = \frac{0.255 \text{ mm}}{0.292 \text{ mm}} = 0.873 \quad (\text{B-4})$$

(Note that the ratios are inverse because image size is inversely proportional to distance...i.e., the image size shrinks as the distance increases.) These ratios, although comparable, are not equal. They differ by about 10%. I have tried other map reconstructions starting from other assumed rafter spacings, but the general result has been the same: the sighting lines do not cross under the wires and the ratios are not equal.

Since the location of the wires is of critical importance in the reconstruction, it is worth mentioning that Hartmann did take a picture in 1967 which indicated that at that time the wires were attached to insulators which were near the peak of the roof. Unfortunately the distance from the corner of the house to the peak (measured horizontally) was not recorded. However, assuming that the distance was about 12', and assuming that the wires ran to a pole at the back of the garage (which they did in 1950) one can estimate the location of the wires. However, this estimate must be considered highly tentative, especially since there are no data on the exact location of the pole behind the garage. Nevertheless, it does seem consistent with the estimated wire location if the wires were 3/16" thick.

One further comment about the wires is in order. Clearly if the wires were as large as 1/4" diameter they would pass essentially (or exactly) over the SLC point. However, it is highly unlikely that wires as large as 1/4" diameter would have been used because of the cost. The purpose of the wires was only to power a light bulb of a 100 watts or so. Useable wires would have been as small as 1/8" diameter, which is standard for house wiring. Such wire is also stiff enough to hold kinks (kinks in the wires shown in the Trent photos were still in the wires when Hartmann visited the farm).

#### Conclusion

The lack of data makes it necessary to reconstruct the scene of the photos using photogrammetric means combined with estimated sizes of objects shown in the photos. This method introduces considerable uncertainties into the reconstruction. The uncertainties are sufficiently great that almost any answer to the two questions posed at the beginning of this appendix can be obtained. However, reasonable reconstructions without any "forcing" of the available photographic data and size estimates indicates that the sighting lines did not cross and that the ratios are not equal. As pointed out in the text these results, even if perfectly accurate, would not prove the sighting was not a hoax. However, these results, if reasonably accurate, do not prove that the sighting was a hoax.

## ADDENDUM

May, 1984

Since this paper was completed for publication in the fall of 1981 some new and valuable information about the layout of the Trent farm has been obtained from the Agriculture Survey Department. The Aerial Photography Field Office (Box 30010, Salt Lake City, UT 84130) located two photos that had been taken in the time frame of interest. The first picture is dated 7/2/48 (DFG Roll 4B, Exposure 93) and the second is dated 5/15/56 (DFG Roll 1F, Exposure 88). These were taken from aircraft which flew over the area but not directly over the Trent farm. The scale of both photos was 1:22222. Both photos showed the same buildings at the Trent farm but the 1948 photo was clearer (better focused?) so I have concentrated my measurement effort on the first photo. The Aerial Photography office sent me a print of the original aerial photo and a five power blowup. I scaled the print of the original using a U.S. Geological Survey map. I then measured the separations of the images of the buildings on the blowup. The estimated accuracy of measurement is about one foot (plus or minus). The accuracy is limited by the slight fuzziness of the edges of the magnified images.

The following diagram is a reconstruction of the Trent farm ca. 1950 as determined by the agriculture photo. I was pleased to find that the scaling which I had done several years before, using only the original UFO photos plus some educated guesses, was very close to correct. For example, in the previous reconstruction I had estimated a distance of 18 feet between the house and the garage. The aerial photo suggests a distance of 17 to 18 feet. The distance in the new reconstruction is set at 18 feet.

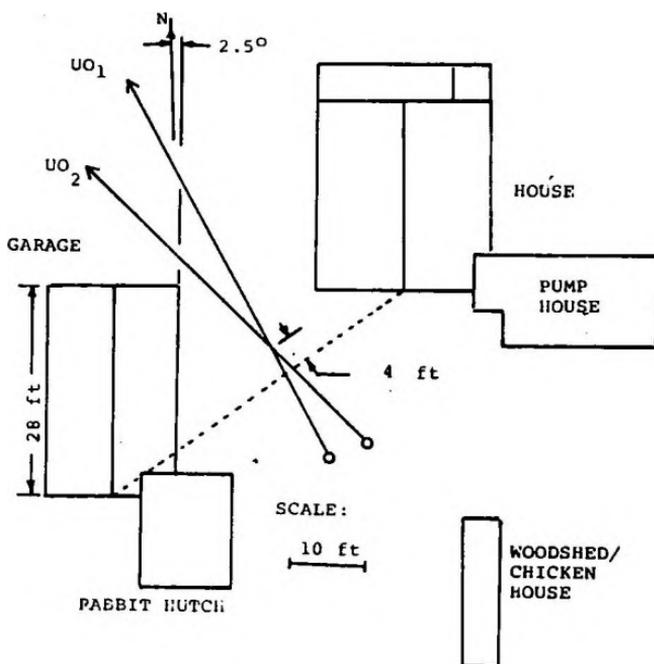
The identifications of the various buildings other than the house and the garage were provided by Mrs. Trent in a number of conversations, including the most recent (Dec. 9, 1982) after I had sent her copies of the blowups.

The locations at which Mr. Trent was standing are illustrated along with the location of the overhead wires as determined by a photo taken by Hartmann in 1967 and by descriptions provided by Mrs. Trent. Hartmann's photo shows the wires attached to insulators near the peak of the house roof. The other end of the wires, according to Mrs. Trent, went to the back of the garage. Hartmann's photo confirms that the wires ran toward the back of the garage, but they do not actually show where the wires were attached. According to Mr. and Mrs. Trent the overhead wires provided power for a light bulb in the garage.

Since the wires were not heavy and they were not carrying much power it may be that they were attached to a board which stuck up from the back of the garage at the peak of the roof. I have seen an arrangement of that type myself in rural settings.

A major "prediction" of the original reconstruction was that the garage must have been unexpectedly long, perhaps more than twenty five feet long from the front to the back. This prediction was confirmed by the aerial photos which indicated that the garage was about 28 feet long.

The major reason for undertaking the original reconstruction was to determine whether or not the overhead wires passed over the slighting line crossover (SLC) point (see Appendix B). The new reconstruction of the back yard of the Trent house, combined



SCALED PLAN OF THE TRENT FARM ca 1950

with the previously determined sighting directions shows that the SLC point was about 4 ft. northwest of the overhead wires which is reasonably close to the original reconstruction which indicated 5.5 ft. if the wires were 3/16" in diameter. The decrease from 5.5 ft. to 4 ft. resulted from better scaling and from a decrease in the distance from the corner of the house to the point where the wires were fastened to the house. I had initially estimated that the distance was 12 ft., corresponding to a house width of 24 ft. using a photo supplied by Hartmann. However, the aerial photos suggest that the house was only 22 ft. wide, so I have adjusted the scaled map accordingly.

The aerial photos confirm that the farmhouse of Mr. Trent's father was 440 feet west of Mr. Trent's house. Furthermore, they confirm that there were no obstructions between the houses so that it would have been possible for Mr. and Mrs. Trent to see Trent's father on the back porch and yell to him before the object had disappeared in the west. (I thank Brad Sparks for initially suggesting aerial survey photos and Philip J. Klass for suggesting that I write for Agriculture department aerial photos.)

As I pointed out in the discussion at the end of the main text of this article, the photos tend to be equivocal on the hoax hypothesis because one could imagine a way in which they could have been hoaxed, and perhaps the Trents could have hoaxed them with some effort and a bit of "luck". (Luck: they suspended a small model which just happened to diffuse light coming from the sky above in such a way that the bottom became a nearly uniform source of light...this requires that the model be constructed from translucent material rather than the simple "hang a pie pan" approach; they suspended the model with a thread that was very thin or else the suspension happened to match the color of the sky background.) If they were lucky in making a model, then their good luck was partly offset by bad luck: they allowed the photos to show the overhead wires from which the model hung.

Because the photos are not completely definitive the argument over the truth of their story must be based in large part upon their own testimony given to reporters, investigators and friends over the years. In evaluating the testimony certain skeptics have emphasized differences between the reported versions of the sighting. In particular, they have pointed to differences between initial newspaper accounts as well as differences between initial and later accounts. These differences are cited as evidence that the Trents really did not witness the event they have portrayed and are therefore reporting a hoax story which they made up but forgot to "coordinate" with each other. On the other hand, if the Trents' reports had been 100% identical it is probable that these same skeptics would point to the complete correlation as evidence of a hoax.

It is my opinion that the slight differences in the reports of the original sighting can be attributed to the facts that the Trents were interviewed after about a month had passed, and that the more detailed interviews (reported after the original

telephone Register article) were done separately (Mrs. Trent at home and Mr. Trent at work, for example). Two people never give completely identical reports of the same event. Therefore it is not surprising that the reports should differ. A further source of differences in the original reports lies in the fact that reporters usually do not report exactly what they are told by a witness. (Even quoted statements are not always correct.) A reporter reports his interpretations of what the witness has said, interpretations which might not accurately portray what the witness was trying to describe. Finally, a newspaper story is usually edited to make it read smoothly and to fit it within a certain space. This editing may further change the report by leaving out or modifying the statements by the witness. Thus, given the fact that the Trents' memory of the exact event would have "faded" during the month before they were interviewed, given the tendency of reporters to write their interpretations of what the witness has said, and given the tendency of newspapers to edit stories, it is remarkable that there is a considerable consistency between published versions of the Trents' report.

Besides the consistency in their versions of the sighting itself, there is a further factor which must be taken into account if one is to decide whether or not the photos are a hoax. That factor relates to the Trents themselves: would they be capable of or likely to create such a hoax. In the text of this paper I have already listed a number of people who have interviewed the Trents and concluded that it was unlikely that they hoaxed the pictures. The reason generally given that they did not hoax the pictures is that they are basically honest people. This opinion was stated by the newspaper people who were first involved with the story, by the banker (Wortmann) at the time that the photos were published and again many years later. Other people who had talked to the Trents gained the same impression (including Wm. Hartmann). As I conversed by phone or by letter with these people who had actually met the Trents I detected an undercurrent of opinion which went beyond simply saying that they are honest people. However, I did not mention that undercurrent in the main text of this paper because its importance did not become clear to me until very recently (May 1984) when I had the good fortune to be put in touch with a farm family that has been neighbors of the Trents since they moved to Dayton, Oregon back in the 1950's. These people stated that they could not remember either Mr. or Mrs. Trent ever mentioning the photos. The opinion which I received from talking with them reinforced what I had suspected from my earlier information: the Trents are not mentally capable of thinking of producing a hoax for any reason, and even if the thought did cross their minds they would be too lazy to carry it out since it would not relate to any of their familiar daily activities.

Without being too blunt, let me simply say that the Trents are neither particularly intelligent nor clever. I remember that in one conversation I had with Mrs. Trent I was trying to find out which way she was facing when she was looking at the object. She couldn't remember which direction was east or west. I asked her which direction she faced when the sun came up and her response was that she would have to be there (i.e., at the house

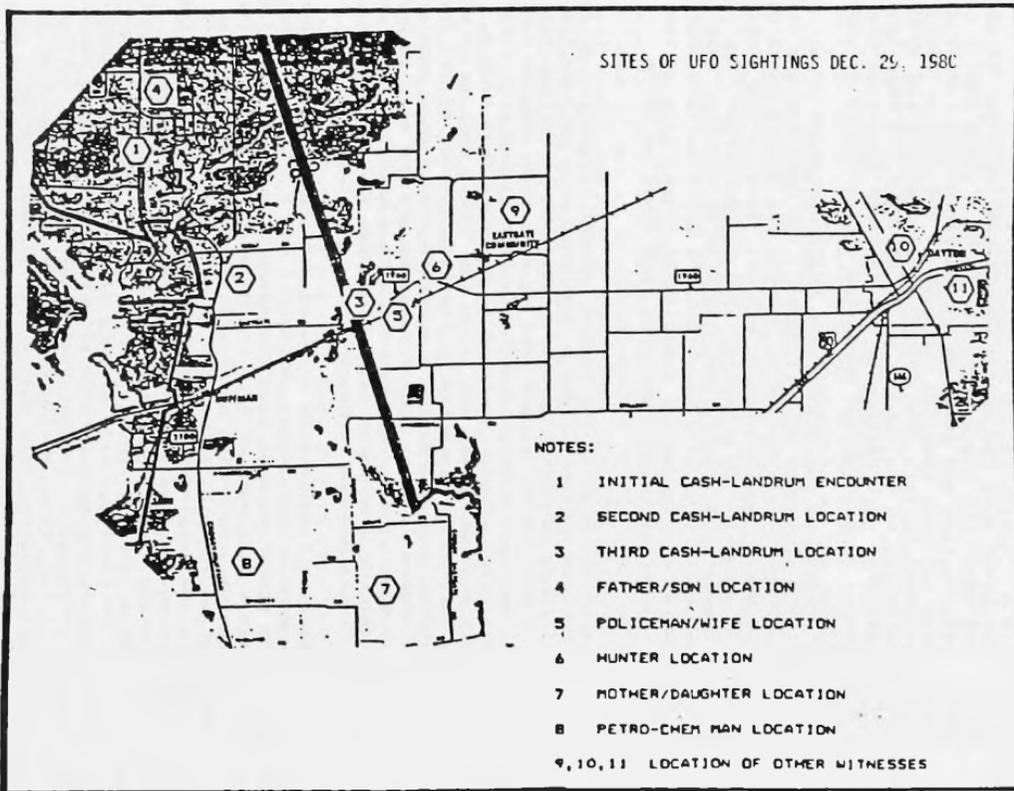
where they lived when the photos were taken) in order to be sure. When I talked on the phone with Mrs. Trent I found that a large portion of the time was taken up in discussions of recent daily events (i.e., things that had happened in the days or weeks before my phone calls), even though I repeatedly tried to direct the conversation to the subject of my interest. I concluded that the UFO pictures were definitely not the most important event in their lives. My opinion was supported very strongly by the neighbors.

As I discussed the Trents with their neighbors I was reminded of a statement by Bill Powell, the reporter who first interviewed them. I asked if he thought the Trents could have hoaxed the photos and his answer was no, "they're too stupid to perpetrate a hoax." In a similar vein, Arthur Fryer, the retired science teacher who visited the Trents at my request, when asked about the possibility of a hoax, said "I can't believe that these people would have the mental capacity to figure ways of fooling anybody. I really think a photo of Paul would be quite convincing."

This "discovery" of the Trents' mental capacity...or lack of same...provides further evidence that they were telling the truth. I would suggest that any skeptic who is serious about disproving the Trents' report must do more than compare and contrast newspaper stories and information gained from later interviews. The skeptic must obtain opinions from people, preferably professionals, who know the Trents well as to whether or not a hoax is consistent with the life history of the Trents. If the photos were hoaxed these opinions should show conclusively that the Trents have the mental capacity and the will to produce a hoax if they so desired. Without such a opinions it is useless to continue the discussion of how the hoax was carried off and how the Trents managed to convince so many people.

In closing I would like to point out that further research could be done on this case, although I don't intend to continue. One could search through local newspapers to locate all of the news stories that were written in the weeks after the publication of the photos. According to an article in the McMinnville newspaper on June 15, 1950, the Trents were "besieged with reporters and cameramen." The stories written by all of these reporters must reside somewhere in newspaper archives. Besides doing historical research, it would also be valuable to interview a number of people who have known the Trents for years in order to compile a life history of the Trents. Because of the results of my own considerable efforts in this case I would be greatly surprised if further historical research or further studies of the Trents would produce any information that is noticeably different from what I have already learned.

But, if someone should undertake such a study I would be interested in knowing the results.



# MEDICAL INJURIES RESULTING FROM A UFO ENCOUNTER

JOHN SCHUESSLER

A number of people sighted the large glowing UFO over east Texas on December 29, 1980; however, Betty Cash, Vickie Landrum, and Vickie's grandson Colby Landrum became involved in a close encounter of the worst kind. Their frightening experience has significantly changed their lives.

The evening began quite casually when Betty and Vickie decided to turn a rent-paying trip into something more entertaining by seeking a bingo game in New Caney, a small town to the west of their homes in Dayton, Texas. When they got there, they found that the games had been cancelled because of the Christmas holidays. To prevent the evening from being a total loss, they decided to have dinner at the truck stop in New Caney. Actually, only Betty and Colby had a meal; Vickie had a cup of coffee.

When they left the truck stop, Betty was driving the 1980 Oldsmobile Cutlass. Vickie was riding in the right hand passenger seat and Colby was between them. The night was quite chilly and they found it necessary to have the car heater on and the windows closed. Earlier in the evening, they had encountered some light misty rain; however, when they left the truck stop about 8:30 p.m., the sky was relatively clear and the rain had stopped.

Initially, their trip through the southern tip of the east Texas Piney Woods was uneventful. They drove casually and chatted about the holiday events and the new restaurant that Betty was planning to open in a few days. The first clue that something was wrong came when they observed a large light above the pine trees some distance ahead. Although the light was extremely bright, they dismissed it as an airplane enroute to Houston Intercontinental Airport and continued their drive back to Dayton.

When they rounded a curve and entered a long straight stretch of Highway FM 1485, they again saw the bright light. This time it approached the road and seemed to float down into the opening between the trees caused by the path of the highway. At first Betty had no intention of stopping the car on that desolate highway, but the object began belching flames downward towards the road. Vickie screamed for Betty to stop, fearing they would be burned alive. Measurements taken during the post-sighting investigation showed their location to be about 130 feet from the strange craft.

At this point they were all very frightened. Betty said, "I was literally horrified." Vickie, being a God-fearing woman, thought she was having a religious experience--witnessing the end of the world



Highway FM 1485  
Scene of Dec. 29, 1980  
Cash/Landrum UFO Incident

Alan Holt standing 133 ft.  
from the witnesses to mark  
the location of the UFO

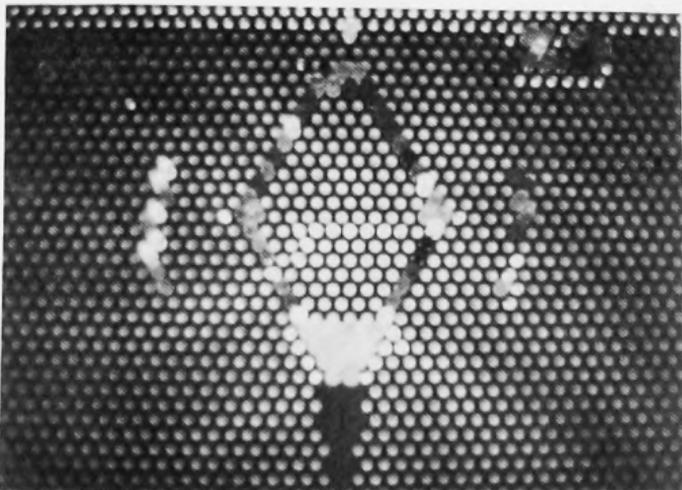


Illustration of UFO  
made by Colby Landrum,  
using a Lite-Brite toy  
set. Shows diamond-

shaped object with fire  
at the bottom, glow at  
both sides, and one  
helicopter at top right,  
January 1981



Artist's sketch of UFO  
and helicopters by  
Kathy Schuessler



CH-47 Chinook helicopter  
from Ellington Air Force  
Base, Houston

and the coming of Christ. She consoled seven-year-old Colby by saying, "Colby, just don't be afraid. That's Jesus. He's coming out of the sky. When you see this big, big man, you're gonna know he's Jesus. He will not hurt us." That didn't help; Colby was still terrified.

Escape was impossible. The highway shoulders were soggy and wet, so pulling the car off the narrow two-lane highway would mean they would be stuck there for the night. There were no other cars in sight, but the UFO lighted the area like daylight. Since they could not get away, they decided to step out of the car for a better look.

At first Betty stood by the door and gazed at the UFO. Then she walked forward to the front of the car for a closer inspection. Vickie just stood in the doorway, staring. She didn't want to miss a second of this important event. Colby was so terrified that he was screaming and tugging at his grandmother. As he became more frantic, Vickie feared he would break away and run into the woods. To prevent this, she rejoined Colby in the car and tried to comfort him while keeping her eyes on the burning sight just ahead.

The UFO appeared to be as large as the Dayton city water tower and dull metallic silver in color. The unusual aspect of the thing was its diamond shape. Small blue lights ringed the center and the points of the diamond seemed to be cut off. The light from the object was intense and lit the whole area. Intermittently, fire blasted downward from the bottom point of the diamond.

Vickie described the flame as being like the intensity of Shuttle rocket exhaust, but it flared outward to form a large cone. The heat was intense. Both women could feel their faces being burned. The car warmed so rapidly that it became hot to the touch. As Vickie leaned forward to peer out the front window, her hands grabbed the padded dash area which molded to the shape of her fingers. The imprints are still there. When Betty returned to the car, she found it necessary to use her leather coat as a hot pad to prevent burning her fingers on the door handle.

The UFO would settle toward the road every time the flame ceased, then would move upward

a few feet when the flame blasted again. The action was repeated over and over for nearly ten minutes. All the while, the brightness of the huge diamond never changed.

Then, with one final blast of flame and heat, the UFO started to move away. The flames stopped, but the object climbed slowly and steadily into the night sky. As it cleared the tree tops, helicopters rushed in from all directions, darting around as if part of a major military maneuver.

As soon as Betty's eyes became accustomed to the dark, she started the car's engine and sped on homeward. Trees blocked any further view of the object in that area. After driving along the curving road for about five minutes, they arrived at the intersection of FM 1485 and FM 2100. When they turned onto FM 2100, a wide and more heavily traveled highway, they could again see the UFO and the helicopters. This time they were able to pull to the side of the highway, where they counted up to 23 helicopters. The light from the UFO illuminated each helicopter so that it was clearly observable. Many of the helicopters were of the large, double rotor type, later identified as the Boeing CH-47 Chinook. One of these huge machines was only a short distance from the car and the noise was deafening.

Driving again, Betty followed along behind the spectacle in the sky until she came to a road that would take them back to Dayton. Even after they had turned away, they could still see the object through the rear window of the car for several more minutes. The incident had lasted at least 20 minutes, but that was only the beginning.

Betty dropped Vickie and Colby at their house at 9:50 p.m. and went to her own home where her friend Wilma and three others were waiting for her. By that time, Betty didn't feel well. She had a splitting headache and felt nauseated. All she wanted to do was sit quietly in a chair until the bad feeling passed, but that was not to be. Soon large knots formed on her neck and scalp and her skin started to redden. As the hours passed, Betty's eyes swelled closed, the knots turned into blisters, she vomited sporadically and developed severe diarrhea. By the next morning, Betty's condition had deteriorated to the point that her friends were afraid she would die.

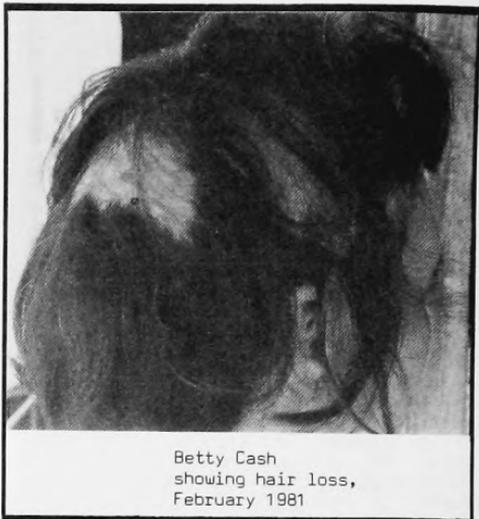
Vickie and Colby also felt the consequences of their exposure, but to a lesser extent. They appeared to have a very bad sunburn, coupled with stomach cramps, vomiting, and diarrhea. During the next several days, Vickie used several bottles of baby oil to treat the burned condition experienced by Colby and herself.

On December 31, Betty's friends summoned Vickie to look at Betty, as she remained semi-conscious. They all agreed that Betty should be moved to Vickie's house where she could be helped. However, obtaining help for a UFO victim is sometimes nearly impossible. For Betty the situation was even worse for two reasons. This was a holiday period and most local doctors had no interest in seeing unfamiliar patients, especially ones claiming burns from a UFO. In addition, Betty had previously been a heart patient and few doctors wanted to assume the risk involved in dealing with the unknown status of her heart condition. To make things more complicated, Betty was barely conscious and totally unable to identify her cardiologist.

Vickie, frustrated by the doctors' lack of concern, continued to look after Betty. Each time food or drink was offered, Betty would reject it and appeared to grow weaker. In one final attempt to find help, Vickie went to the local druggist and pleaded with him to look through his prescription records for the name of Betty's cardiologist. Armed with that information, Vickie made one telephone call and got instructions about taking Betty to the Parkway Hospital emergency room immediately.

By the time Betty entered Parkway on January 3, she was losing large patches of skin, her hair was falling out in large clumps, and she was weak and unable to walk. After 12 days in the hospital, Betty went home, although she had shown little improvement. Her condition continued to deteriorate until she returned to the hospital for another 15 days.

Vickie and Colby were also having troubles during the days following the incident. After two or three weeks, their stomach cramps and diarrhea became less of a problem; however, their skin sores and eye damage persisted.



Betty Cash  
showing hair loss,  
February 1981

The observable medical effects are many and varied. The more pronounced problems are summarized in Table I. At first look, it would seem that no one type of exposure could cause such radical results. However, the Mutual UFO Network radiology consultant reviewed the medical records and the observable effects and concluded: "We have strong evidence that these patients have suffered damage secondary to ionizing radiation. It is also possible that there was an infrared or ultra-violet component as well." This means that the symptoms listed in Table I could have been caused by ionizing radiation plus ultraviolet and infrared radiation.

Other mechanisms could explain some of the effects. An acid atmosphere caused by a hot exhaust interacting with a polluted atmosphere could cause a variety of skin conditions; however, the weather on December 29 does not favor this solution. Local inflammatory changes and severe febrile reactions could cause some of the problems, but they too could occur in association with radio-dermatitis secondary to ionizing radiation. Finally, some of the conditions could be caused by emotional distress.

TABLE I

<u>Condition</u>	<u>Betty</u>	<u>Vickie</u>	<u>Colby</u>
Reddening of the skin (erythema)	X	X	X
Eyes swollen, watery, painful	X	X	X
Edema of the eyelids	X	X	X
Stomach pains	X	X	X
Loss of appetite (anorexia)	X	X	X
Diarrhea	X	X	X
Vision impairment	X	severe	X
Cataracts		X	
Hair loss	50%	40%	minor
Blisters	gross	medium	minor
Vomiting	X	X	X
Shedding of the nails (onychomadesis)	X	X	
Hair regrowth of a different texture	X	X	
Lethargy	X	X	X
Skin scarring	X	X	minor

There are no existing tests that will identify the specific type of radiation that was inflicted upon these witnesses. In fact, radiation experts often do not agree between themselves as to the limits or extent of physical injury due to radiation exposure. For example, one government expert said: "Because these people have lived past six months and some of the symptoms have been caused by other factors, you cannot prove they were exposed to ionizing or non-ionizing radiation."

A non-government radiation expert stated: "Any amount of radiation can cause cellular damage. Most cells may go undamaged; however, some will be killed and others mutated." The long-range outcome of that damage is undefined and is a basis for the Nuke/No-Nuke debate that continues in the United States.

It is not necessary for the source and type of radiation to remain a mystery in this particular case. Each of the witnesses reported a large number of helicopters flying in the area and around the UFO. They provided sketches and later selected at least one set of photographs from documents containing sketches and pictures of various helicopter types. They were the large twin-rotor CH-47, manufactured by the Boeing Company, Vertol Division, and commonly known as

the Chinook. The smaller type of helicopter also seen that night could not be positively identified, but had only a single rotor on top.

Researcher Allan Hendry was commissioned by the Fund for UFO Research to attempt to find the source of the helicopters, but after numerous telephone calls he concluded that there were no helicopters in the Houston area that night. He proposed that this was a type of war game where a VTOL Harrier aircraft was participating in an electronic counter-measures exercise, being pursued by helicopters. Physicist Alan Holt of Project VISIT in Houston checked with the U.S. Marine Corps and found they could account for all of their Harriers on December 29 at locations other than Houston.

Most military installations powered down for the Christmas holidays and flew very few missions, except for reserve installations where their pilots were trying to fulfill their flight time requirements during these year-end holidays. One significant helicopter operation took place at Gray Air Force Base near Killeen, Texas, where more than 100 helicopters came in from the field "for effect." Other activity was noted at some small and generally unknown locations in Texas and Louisiana.



Vickie Landrum and  
Colby Landrum,  
July 1981



Betty Cash (in wig),  
June 1981

Project VISIT investigators Dave Kissinger, Don Tucker, and Bill Eatwell located one credible witness to the helicopter activity near Crosby, a small east Texas town along the projected UFO/helicopter flight path. They also located other people that saw the UFO for as long as one-and-a-half hours before it burned Betty, Vickie, and Colby. In addition, a policeman and a sheriff's deputy vowed they too had seen the helicopters.

Researchers have offered three possible hypotheses for the helicopters near Huffman, Texas, that chilly winter night:

- (1) The helicopters were either imagined or were UFOs disguised as helicopters
- (2) They were part of a classified military operation, in which case the U.S. government is liable for damages
- (3) The helicopters were part of a UFO intercept, perhaps to protect the evidence if the troubled craft had crashed

The votes are not all in yet, but a Houston physician said, "The truth in this case is probably stranger than fiction."

Curiously enough, the victims are as concerned about future UFO burn victims as they are for themselves. The tongue-in-cheek attitude of media people, doctors, and politicians made their task of obtaining help frustrating and frightening. The first help

Vickie received was when she contacted the Dayton police chief and he gave her a UFO hotline telephone number for Robert Gribble in Seattle. Mr. Gribble immediately turned the information over to the Mutual UFO Network, the Aerial Phenomena Research Organization, and the Center for UFO Studies, all reliable organizations dedicated to helping the public.

When Betty and Vickie contacted their congressman, their frustration was heightened. All they received in return was a form letter telling about the now defunct Air Force project to log UFO reports and a suggestion that they contact a cult group in California. The military helicopter operations were completely ignored. Ellington Air Force Base had nothing to offer even though they fly CH-47 helicopters.

NASA provided the most assistance. Their representative listened courteously as Betty told about the incident and the helicopters, then suggested she contact John Schuessler for follow-up. At that point help was on the way. Later Vickie said, "If it hadn't been for Mr. Holt and Mr. Schuessler, I think I would have gone crazy." She wants to be sure that help is available to future victims, without fear of ridicule or censorship. Especially important is the attitude of medical people and their preparation for treatment of UFO-induced injuries.

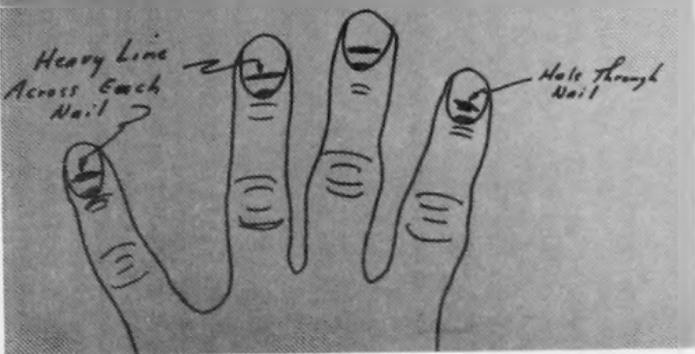


Vickie Landrum  
showing eye irritation.  
February 1981



Vickie Landrum's hand  
showing sores and scarring,  
June 1981

VICKIE LANDRUM  
FINGERNAIL DAMAGE  
Left Hand - Feb. 28, 1981



Sketch of fingernail damage on left hand of Vickie Landrum, February 28, 1981



Colby Landrum showing small spot of hair loss, July 1981

## DISCUSSION

?? Was there any cardiac change as a result of this incident?

S. The best we can determine is no. Betty's heart report was 100%. She was in good shape from that. The doctor has examined her extensively, fearing something might go wrong, and could determine no degradation as a result. Most of her effects were external, skin-type of effects, except for the headache and intestinal-tract effect. From the heart, the blood system was apparently unaffected.

?? Did you consider effects of non-ionizing radiation as well as ionizing radiation?

S. We have looked at that, and some of the effects could be duplicated by non-ionizing radiation. They could also be duplicated by chemical reaction as well. We looked at all these things, but it's our opinion at this time, that it was probably a combination. In talking to the experts involved, Dr. Rank and others, it appears to be a combination of several types of radiation--a broad band.

?? Have you considered microwave radiation as a possible cause of these health problems?

S. Well, I think that the possibility of microwave is high, not only because of the cataract growth, though the lady is of the age that she might have cataracts anyhow. Quite possibly she could have had a cataract problem before this. The thing that we're looking for now is a rapid change in the cataract.

A secondary thing that could be caused by exactly what you're saying is the heating of the car. Remember, the car became extremely hot, hot to the touch. [Comfortable] touch temperature by our NASA scale is 109°. Anything above 109° is uncomfortable to the skin, [producing] a burning feeling, so we figured it was above 109°.

?? Could possibly the heating of the car have caused some vaporization of materials within the car?

S. We have considered that, too, but there are a couple of problems with that. Most of the products within the car require temperatures of 200° or more to vaporize. We don't believe it got that hot because it would have been almost unbearable for them to breathe in it, first of all. Secondly, a temperature of , say 120° inside a car in Houston, Texas is not uncommon in the summertime. So if it was 120°, this car had been sitting in that kind of temperature all summer. It had had a lot of bakeout, in other words, a lot of stabilization of materials. So we could, again, bracket the temperature as not beyond what they could breathe and continue to breathe satisfactorily and not affect their bronchial tracts.

?? Did you consider the possibility of food poisoning?

S. Yes, that's always a possibility, and we checked that one; in fact that was one of the first we checked. Knowing that Betty is a restaurateur (she ran a restaurant and was going to open a bigger one), we tracked back to see if they had any common food that day. The last thing that they had to eat was at a truck stop in New Caney at 8:30 p.m. Betty had bacon and eggs and coffee, Vicki had only coffee and Colby had a dessert--no commonality in food whatsoever. And earlier in the day it was the same--they weren't even together earlier in the day. The effects were so prolonged over weeks and even months that we don't believe it could have been food poisoning.

?? Is legal action being considered?

5. The answer is yes. The ladies are considering legal action; they've been instructed by Senator Tower and Senator Benson to talk to the Judge-Advocate-General of the U.S. Air Force in Texas. They've done that, they've met with him to receive the forms. The MUFON lawyer, Bill Skedd, is helping them to fill out the forms and put the proper material together, and they will file a claim against the U.S. government.
- ?? Have there been any correlations between reports from Lou Farish's clipping service and this case?
5. We've got very little of what we consider factual information, but one good thing the clippings did tell us was that there were several other sightings that day, and the day before, as far away as Kentucky. So we can track diamond-shaped objects in several other areas, which is very interesting.
- ?? How many specialists did Betty see in the hospital, what about her headaches, and how much are her bills?
5. Her bills are running something like \$10-12,000 so far. I have had all of her medical records I can get--and that's not all of them--released to me. We have hopes of more coming. I have an itemized statement of every bit of medicine or treatment that she had taken during hospitalization. Part of the list: she saw seven different specialists ranging from dermatologists to radio therapy specialists to internists, her cardiologist, Dr. Sheney, and others. The headaches were total-head headaches; they weren't localized at any one point--her head was just splitting. There was no way of seeing, feeling or anything else but the headache.

There was one other point I missed when I described her reaction. When she was in front of the car and she could hear this beeping in her head, she said it got to the point that it gave her an earache, and she had never had an earache. It actually physically hurt her ears. She thought that was a very strange reaction.

- ?? Did she see an ear specialist?
5. There was not an ear specialist called in, and that's part of the problem. One thing that we want to make come out of this, if possible, is to come up with a familiarization of medical people with UFO cases, so that they can be more properly investigated. They did such things as mammograms, you know, that really had no relation to the case, but they wanted to see if there was some possibility that that was causing some of the problems. They ran a lot of tests, CAT scans and others, but some of the things they could have done they didn't do. And that is one thing that Betty and Vicki have both asked that we bring forth--that some things were not asked about. They would like for future people [witnesses/victims] to have the right tests run quickly and immediately, then they would be more help.
- ?? Were there any abnormalities in the blood count, particularly the white blood cells?
5. That's a hard question to answer. That's the largest part of the records that we've been unable to have released. We talked to the cardiologist who said that Betty showed a standard anemic reaction that could be expected from a person that had had a heart bypass operation some time before, so there was some difference in what you would expect in your blood and in her blood. But as to the basic record, we've only gotten a couple or three of

the tests release, and not the whole series. And that is of some concern to us. From what we've been told by the doctors, there were no more abnormalities, but we haven't really seen that for sure. We're hoping to have further tests run on these people, by the way.

?? Were there more damages to the upper part of the body or to the lower part of the body, because of the protection of the car and the like?

S. With Vicki outside the car, as she stood within the doorway, her top half exposed and her head on or above the car, she had more face and head type damage, and on her hands and arms. There were not too many sores on the lower part of her body. Betty, on the other hand, stood firmly in front of the car. She had whole-body sores. She had blisters on her legs that were covered by long pants, similar to what she had on her head, but not as great. She had large bulbous sores come on to her head; her neck swelled. Her kids didn't recognize her in the hospital--it was that bad. And in fact, I've got a statement from her brother-in-law that "I went to the hospital to see her, but I didn't get very close to her," like "I'm not sure what's wrong with that lady!"

*Because of the time that has elapsed between the Conference and the publications of the Proceedings, an account of the events subsequent to the sighting seemed both possible and desirable.*

M.H., Ed.

As Betty Cash and Vickie Landrum began to recover somewhat from the effects of their exposure to the object they sought help from various governmental agencies. Telephone calls to local officials and military installations were futile. They could find no one willing to listen to their complaint or supply worthwhile information. Finally, on May 31, 1981 the Center for UFO Studies suggested that the victims contact their Senators John Tower and Lloyd Bentsen in Washington, D.C.

In July both Senators sent identical letters describing their conversations with representatives of the Department of Defense, and suggested that they contact the Judge Advocate Claims Officer at Bergstrom Air Force Base, Austin, Texas, where they could file an official report and submit a claim.

In August they drove to Bergstrom and met with several Air Force lawyers, who questioned them about the details of the incident and recorded the whole proceedings. At the end of the meeting they were given blank forms and told "if they could find a lawyer that would help them" they should submit an official claim to the U.S. government for the injuries they had sustained. About the same time New York attorney Peter Gersten called to volunteer his services in the case. Mrs. Cash and Mrs. Landrum welcomed his assistance and provided the information necessary for submittal of the claim.

Because of a Congressional inquiry (which was itself stimulated by the publication of several magazine articles and a television program) the Air Force began a cursory investigation into the allegation that Air Force helicopters may have been involved in the incident of Dec. 29, 1980. This was soon terminated after the discovery that the Air Force does not operate twin rotor helicopters.

Next, the Department of the Army Inspector General assigned Lt. Colonel George Sarran to the case and he conducted a fairly extensive investigation. He stressed that the Army had no interest in the object, but was concerned about the allegation that Army helicopters were involved. Lt. Col. Sarran made numerous telephone calls to many military and civil agencies as part of his investigation without success. These included talks "with Major Dennis Haire local commander for eight Chinook Texas National Guard helicopters stationed at Ellington Air Force Base, south of Houston; and with CW4 Gustofson, senior AST for seven Army Reserve Huey helicopters stationed at Tomball civilian airfield northwest of Houston..."

On May 25, 1982, Lt. Col. Sarran visited the Houston area for an on-site investigation. He interviewed the victims, the investigators and some of the witnesses. One of the witnesses was a Dayton police officer who had stated that he and his wife also spotted more than 12 of the Chinook-type helicopters in the Huffman area that night. The policeman was familiar with the helicopters because he had flown in that model while in military service.

The conclusion of Lt. Col. Sarran's report is as follows:

Ms. Landrum and Ms. Cash were credible. The DAIG investigator felt (four lines censored). The policeman and his wife were also credible witnesses. There was no perception that anyone was trying to exaggerate the truth. All interviewees were extremely cooperative and eager to be helpful in any manner. Through the course of inquiry the DAIG investigator tried to concentrate on any reason or anyone or organization which might have been flying helicopters that particular evening in that general area. There was no evidence presented that would indicate that Army, National Guard, or Army Reserve helicopters were involved.

Through attorney Peter Gersten they filed a claim, which alleged government involvement because the helicopters described by the witnesses were of a type used only by the military. The claim was rejected, as was the appeal. They were told then that they could sue the U.S. government in Federal Court. Again, they followed instructions and filed a civil action in the U.S. District Court, Southern District of Texas, Houston, Texas.

Their contention was that they had been wronged, physically injured, while driving on a public thoroughfare. The government was at fault because their injuries were sustained while in close proximity of the military helicopters and the large glowing object, later called a UFO for lack of a better term.

The United States District Court Docket Call was set for September 3, 1985. Frank Conforti, Assistant United States attorney, requested dismissal or a summary judgement in favor of the United States. The attorney for Cash and Landrum replied that the United States was not entitled to a dismissal. Judge Ross Sterling did not make a decision on Mr. Conforti's request. Therefore the case did not go to trial.

Nearly one year later, on August 21, 1986, Judge Sterling dismissed the case on the basis of expert testimony submitted by Mr. Conforti. The experts, from NASA, the Army, Navy and Air Force, addressed only the issue of whether or not the United States owned and operated a device as described by Cash and Landrum and sidestepped the issue of military helicopters. Thus Judge Sterling will not hear the evidence that Betty Cash and Vickie and Colby Landrum wanted to present.

The witnesses' health has continued to deteriorate. Betty Cash has been hospitalized at least 25 times, has had two operations for cancer (after having shown no previous signs of it). She has had blood problems, trouble with her eyesight. Her hair has regrown, though in a different texture, but she is still very weak and has to spend a good deal of time in bed.

Vickie Landrum has had continual sickness for several years, has been susceptible to everything, and always has sores. Her hair has grown in again in a different texture, but she has never regained good eyesight. Colby Landrum, after several years of continuous sickness and colds, as well as warts, hair loss, sores and knots on his knees, has finally begun to show a fairly normal level of energy, although his growth has not been at the expected rate.

The medical conclusion as to the nature of their injuries has been that ionizing (nuclear) radiation could account for 90% of their injuries, and non-ionizing (microwave) radiation could account for another 9%. The source remains completely unidentified.



# A TESTABLE HYPOTHESIS FOR FALLACIOUS ABDUCTIONS: BIRTH TRAUMA IMAGERY IN CE III NARRATIVES

ALVIN LAWSON

Those who believe that UFO abductions relate to alien beings, parallel universes, or other exotic origins will ultimately have to explain--along with the lack of unambiguous physical evidence--why incidents and images reported by abductees are so similar to those reported in a variety of obviously psychological processes. These processes or abduction analogs include drug-induced hallucinations, near-death experiences, religious and metaphysical ecstasies, shamans' trances, and particularly the revivification of trauma associated with fetal development and birth.

Psychiatrist Stanislav Grof, a follower of Otto Rank with years of experience in the therapeutic use of LSD, believes that many of his patients relive their own birth trauma (BT) during LSD sessions (1):

In a way that is not quite clear at the present stage of research, the subjects' experiences seem to be related to the circumstances of the biological birth. LSD subjects frequently refer to them quite explicitly as reliving their own birth trauma. Others regularly show the cluster

of physical symptoms . . . that can be interpreted as a derivative of the biological birth. They also assume postures and move in complex sequences that bear a striking similarity to those of a child during the various stages of delivery.

Grof's work is of interest to ufology because revivified BT narratives provide a remarkably extensive collection of abduction-image parallels. The study of these parallels will help determine whether we should think of abductions as psychological rather than physical experiences. Also, many of Grof's subjects report LSD fantasies centering on contact with alien entities from other worlds, or even other dimensions or parallel universes. Several have specifically described encounters with "flying saucers" and science fiction adventures similar to TV's "Star Trek" (2). Grof's findings seem to show that UFO narrative data are a common part of psychiatric therapy programs where LSD or other hallucinogens are utilized, and are supported by other reports from cancer wards that terminal patients on certain drug therapies commonly have spontaneous abduction fantasies (3). Such data appear

to contradict Berthold Schwartz's assertions as to the absence of UFO-related fantasies in psychiatric patients (4).

Grof's work confirms in part the results from our 1977 series of imaginary abduction experiments (5), which cast doubt on the physical reality of CE-III events, and on the reliability of abduction case data retrieved through hypnosis. The imaginary series attempted to distinguish "real" CE-IIIs from hoaxes and fantasies, but concluded only that, since they utilized essentially identical imagery and events, one could never be certain. The present study emphasizes that BT data can be obtained through hypnosis as well as drugs, and proposes that the existence of BT imagery in abduction narratives provides ufologists with a criterion which can help determine false abduction reports from any that may reflect actual events.

A word on the reliability of revived birth trauma narratives. Although Grof finds "perinatal" or birth-related imagery and events omnipresent in human affairs (e.g., in anthropology, mythology, Gestalt and other therapies, initiation rites, and religious ceremonies), he cautions that a "causal nexus" between specific events of one's biological birth and particular images has yet to be established. Again, Grof's BT sessions contain non-BT data, including hallucinatory imagery, autobiographical details from later memory, and fantasized experiences.\* These psychological phenomena are related not to birth or to UFOs but to the central nervous system. But it doesn't matter that BT sessions are not entirely factual so long as there are demonstrable BT/CE-III image parallels in the complex of psychological processes which emerge during revivification sessions.

I believe that the many parallels between abductees' narratives and the above and other psychological processes argue that abductions also are mental rather than physical experiences. Since abduction reports show features of sequence and structure which seem consistent with major perinatal events, they therefore support the view that abductees unconsciously use components of the birth process as

a matrix for a fantasized abduction experience. While there is a contemporary tendency to think of the whole UFO phenomenon in terms of the extraterrestrial or other (increasingly bizarre) hypotheses, the smaller abduction component of that phenomenon seems to me to be a psychological process. It is this view of abduction reports which will be set forth in the following pages.

I must add a note on the reliability of hypnosis. During hypnotic regression of BT subjects and alleged abductees, it is probable that data from at least three non-BT and four non-UFO sources may corrupt witnesses' narratives. All the more reason to interpret hypnotically derived "evidence" with caution.

### I

The many imagery parallels among abduction analogs suggest that they have a common source. One of the most likely sources is the birth experience and its associated trauma, since birth is a universal phenomenon which is free from ordinary cultural influences and is, as far as we know, one of the first significant conscious events experienced by human beings. Grof describes the four perinatal stages as "matrices" because he believes that each stage has major implications for later personality development and behavior (6):

<u>STAGE</u>	<u>DESCRIPTION</u>	<u>TYPICAL EVENTS</u>
I	Primal union with the mother	"Good" and "bad" womb experiences
II	Onset of birth process	Contractions in a closed uterine system
III	Synergism with the mother	Propulsion through birth canal
IV	Separation from the mother	Termination of the symbiotic union formation of a new relationship

Since BT narratives from each stage contain many abduction parallels, they merit extended discussion and analysis.

\*I use the term "birth trauma" loosely to refer to the entire complex of imagery (BT, hallucinatory, remembered, imagined) under discussion, a procedure which, since it follows Grof's data closely, seems appropriate.

Some of the many solid abduction/birth trauma parallels are listed in the following comparative table of images and events chosen from CE-III reports and subjects' narrative descriptions of Grof's four perinatal stages. Note that the chronologies of BTs and abductions seldom observe the same sequence. Rather, BT subjects jump back and forth from any of the four stages at will, just as abductees sometimes report experiencing their abductions in unique sequences. So while the chronology of events in abductions/BTs is not always consistent with that followed below, the similarity of imagery and incidental details is obvious. Also, birth events are so various and idiosyncratic that no two BT narratives nor the CE-IIIs built upon them will ever be identical.

This means that there will always be apparent non-patterns in abductions, an important fact for investigators to know. I have indicated the perinatal stages of all parallels below and some representative (but by no means all) CE-III cases which demonstrate them. Note that I have included contactees and imaginary abductees along with "real" cases. In addition, though most of the alleged witnesses in Budd Hopkins' recent book, *Missing Time* (Marek, 1981), appear to be imaginary abductees, I have indicated them separately by the author's surname. All three groups--regardless of the physical reality of their experiences--provide essentially the same visual imagery and events as "real" CE-IIIs, thus supporting the thesis that all are related to BT experiences.

In addition to the above patterns, Grof's subjects commonly report visions of deities and other creatures which can be classified in the same six distinct types which are observed in UFO entity reports. In one BT fantasy, in fact, a subject described being confronted by no less than five types of creatures (7):

The square was surrounded by Gothic cathedral facades and from the statue niches in these facades and from the gargoyle downspouts in the eaves animals, persons, animal-human combinations, devils, spirits--all the figures that one observes in the paintings of Hieronymus Bosch--came down from the cathedrals into the square and moved in on me.

Five of the six UFO entity classes are described here explicitly: human ("persons"), humanoid ("devils"), animal, exotic ("animal-human combinations"), and apparitional ("spirits"). The sixth type, an explicit formulation of a robotic sensibility, occurs in another subject's BT vision involving "the dehumanized, grotesque, and bizarre world of automata, robots, and mechanized gadgets." Grof says that creature types from BT narratives seem to be identified with particular emotional stresses originating in the various experiences of development and birth. These stresses may cause the embryo/fetus to respond in distinct emotional or imaginative contexts which may, years later, be associated with individ-

ual creature types. For example, one subject felt that he had achieved, in the course of "good womb" and "bad womb" experiences (as Grof terms them), a sudden understanding of the genesis of demons from diverse cultures (8):

The demons surrounding the peaceful Buddha figure on many Indian and Tibetan religious paintings appeared to him to be representatives of various forms of disturbances of the intrauterine existence. The subject could distinguish among them the bloody, openly aggressive, and ferocious ones, symbolizing the dangers of biological birth; the others, more insidious and lurking, represented the noxious influences in the intrauterine life.

The "good womb" and "bad womb" experiences occur in the first perinatal stage and consist of alternating positive (undisturbed intrauterine life) and negative (disturbed intrauterine life) events in terms of their effect upon the fetus. Both extremes contain plentiful abduction echoes. In reliving "bad womb" experiences, Grof's patients report fetal distress such as feelings of sickness, nausea, and mild paranoia, which may be traceable to any of several causes such as the mother's physical or emotional health, her ingestion of noxious substances, or attempted abortion. "Good womb" revivification manifests itself in pre-birth bliss including feelings of cosmic unity, transcendence of

<u>ABDUCTION IMAGE/EVENT</u>	<u>CE-III CASES*</u>	<u>STAGE--BIRTH TRAUMA IMAGE/EVENT</u>
Loss of control	All	IV--"It was as if I were . . . losing control, and being quite unable to arrest the . . . plunge. . . ." 146 **
Bright light	Virtually all	IV--Radiant light of blinding intensity may seem supernaturally bright. 143
Paralysis	Many	II--Visions of "no exit" entrapment, being fixed, chained, or unable to escape an inevitable doom or unrelenting threat. 119-123
Struck by beam of light	A.V.B. Contactees Garden Grove Hopkins' Ss. Imaginary Ss. Larson Silviera Walton	I--". . . an incredible amount of light and energy was enveloping me and streaming in subtle vibrations through my whole being." 113
Levitated by tube of light	Many	IV--"We were rising toward light, higher and higher, through majestic white marble pillars. . . . We rose into whiteness. . . ." 147
Tube or tunnel	Many	II--Visions of "cosmic engulfment" or a gigantic whirlpool/maelstrom "sucking the subject and his world relentlessly to its center." 121
Metallic sounds, hums	Many	IV--Hum of machinery, sounds of surgical instruments, etc., as if from a hospital room.*** 139
Size change	Private Case Contactees Higdon Hopkins' Ss. Imaginary Ss. Spaur (CE-II) Walton	IV--"We all became very small--as small as a cell, as small as an atom." 148

\*CE-III cases are referenced in Appendix I.

\*\*Numbers refer to pages in Grof's Realms of the Human Unconscious.

\*\*\*In a later group of LSD sessions which Grof terms "transpersonal" experiences, subject recalled pulsing heart sounds, peculiar hollow, roaring noises, and distorted sounds akin to electronic musical effects--all of which he identified with fetal memories of maternal blood circulation and heartbeat, peristalsis, and outside sounds perceived through the abdominal wall and amniotic fluid. 161  
The abduction case parallels here are obvious

(continued)

<u>ABDUCTION IMAGE/EVENT</u>	<u>CE-III CASES</u>	<u>STAGE--BIRTH TRAUMA IMAGE/EVENT</u>
Big room	Andreasson Contactees Garden Grove Hopkins' Ss. Imaginary Ss. Walton	IV--Separation from mother coincides with feelings of decompression and spatial expansion; also, visions of gigantic halls, open spaces, etc. 139
Starry skies	Contactees Garden Grove Higdon Hopkins' Ss. Imaginary Ss.	I--Visions of "cosmic vistas," galaxies, solar systems, star-filled skies, etc. 113
Entities	All	I--Many visions of fetuses and of embryonal experiences. (105ff) I--". . . archetypal demons . . . creatures from fairy tales. . . ." 113 II--". . . dehumanized . . . world of automata, robots . . ." 116 IV--". . . animals, persons, animal-human combinations . . . spirits. . . ." 146
Extraterrestrial hypothesis inferred	Most	III-- <u>War of the Worlds</u> type invasions 125
Absurd events	Most	II--Agonized struggle of early birth results in feelings of the meaninglessness of life, death, struggle itself, etc.; world seems to be insane. 118
Physical examination	Most	II--Subject is concerned by an apparent threat to bodily survival and integrity as recalled in past operations, imprisonment, interrogations, illnesses, etc. 121
Reliving own medical history	Andreasson Imaginary Ss. Kendall Larson Many others?	II--Subjects recollect sensations and detailed circumstances and operations and medical treatment. 121
Body dismemberment	Andreasson Garden Grove Hopkins' Ss. Imaginary Ss. Larson	III--Subjects experience "sadoomasochistic orgies, mutilations and self-mutilations . . . ritual sacrifice . . ." and other bloody events. 124 IV--Ego death/rebirth symbolism; a victim may feel that his body is cut open and his heart or other organs are removed; replacement brings a sense of rebirth, renewal. 142

(continued)

<u>ABDUCTION IMAGE/EVENT</u>	<u>CE-III CASES</u>	<u>STAGE--BIRTH TRAUMA IMAGE/EVENT</u>
Umbilical pain	Andreasson Hill Kurz	IV--Subjects report severe pain in the umbilical area, often spreading through the pelvic area. 141
Relief after intense pain or threat of some kind	Hill Larson Walton	IV--Individuals completing the death/rebirth sequence feel relief accompanied by deep emotional and physical tranquility. 140
Breathing problems	A.V.B. Garden Grove Walton	IV--Sense of breathing difficulties, suffocation, and related feelings of emergency. 141
Unpleasant tastes	Andreasson Garden Grove Walton	I--Unpleasant taste in the mouth described as a combination of biological and inorganic (i.e., ammonia, metallic, iodine, etc.) substances. 108
Unpleasant odors	A.V.B. Garden Grove Imaginary Ss. Walton	III--Unpleasant or revolting odors of biological origin such as sweat, feces, or putrefaction, etc. 131
Sexual seduction by entities	A.V.B. Kurz	III--Common motif in this stage is intense sexual excitement as in the uninhibited carnival atmosphere of Rio de Janeiro, and similar scenes; seduction and rape also are reported. 130
Current through head and body	Andreasson Garden Grove Imaginary Ss. Kendall Larson	III--Incidents of "powerful currents of energy streaming through" the body. 124
Head and body pressure	Andreasson Garden Grove Imaginary Ss. Kendall Larson Walton	III--Great pressure and pain on the head and body, and related distress. 134
Alternating chills and fever	Andreasson A.V.B. Hopkins' Ss. Imaginary Ss. Kendall	III--Hot flushes alternating with chills, and profuse sweating with shivering. 134
"TV screen" flashbacks, life review, visions	Many	IV--Subjects often experience a rapid sequence of key events from past and present life. 145

(continued)

<u>ABDUCTION IMAGE/EVENT</u>	<u>CE-111 CASES</u>	<u>STAGE--BIRTH TRAUMA IMAGE/EVENT</u>
Message	Most	I--"I suddenly understood the message of so many spiritual teachers that the only revolution that can work is the inner transformation of every human being." 114
Knowledge gained from the CE experience	Most	I--Intuitive insight into the meaning of the cosmos, which is deemed "more relevant" than specific, concrete, or pragmatic knowledge. 106
Messianic complex, identification with Christ, etc.	Andreasson Contactees Garden Grove	IV--Identification with suffering, death, and transcendence of Christ; sense of unity with God. 142
Womblike rooms on UFO	Andreasson A.V.B. Contactees Hopkins' Ss. Imaginary Ss.	I--Many realistic details suggestive of the original embryonal/fetal situation within the womb, including specifics of intrauterine development involving the umbilical cord, fluid, and placenta. 105ff and 158ff
Womblike containers on UFO, filled with liquid and an "umbilical"	Many	I--Descriptions of or identifications with the embryo/fetus in the womb, with many details of the sensate life of the fetus. 105ff
Apocalyptic events, visions of future devastation	Andreasson Contactees Garden Grove Imaginary Ss.	III--Earth pictured as besieged by disastrous events of man and nature: atomic war, earthquakes, hurricanes, novas, etc. 124
Return	All cases(?)	I--"Only reluctantly was I giving up this experience and returning to my usual consciousness." 114
Loss of a sense of time	Most	I--"This . . . experience lasted for what seemed an eternity . . . seemed to open into time instead of space. . . ." 113
Ineffability	Most	I--"I reached a new feeling of harmony and self-acceptance, and a global understanding of existence that is difficult to define." 115
Aftermath	Most	I--"I felt . . . that something of the utmost relevance had happened to me . . . and that I would never be the same." 114

space and time, visions of paradise, "oceanic" emotions, and other parallels with mystical or ecstatic experiences. Veteran CE-III investigators have often observed similar extremes of emotional responses from witnesses.

The dominant creature type in both BT narratives and Ce-III reports is humanoid and resembles the human fetus. Grof says that subjects "frequently report visions of or identification with embryos, fetuses, and newborn children. Equally common are various authentic neonatal feelings as well as behavior" (9). Many if not most UFO humanoids, such as those described by Betty and Barney Hill and Travis Walton, closely resemble a fetus or embryo, specifically with regard to underdeveloped facial and other anatomical features. The fetus-like UFO alien thus provides a major parallel between abduction and BT narrative data, and deserves further examination. Some commonly reported humanoid characteristics are listed below, with similar descriptive details from prenatal chronology offered for comparison (10):

REPORTED HUMANOID CHARACTERISTICS

HUMAN PRENATAL CHARACTERISTICS

Diminutive size (2 to 5-1/2 ft)	Small throughout gestation period
Frail-appearing body	Frail until late in gestation
Disproportionately large head	Head size disproportionately large from 4th wk
Eyes comparatively large	Eyesockets large; eyes form from 4th wk; eyes half adult size at birth
Hands, feet "missing" or rudimentary	Hand plates 5th wk; foot plates 6th wk
"Claws" or webbed fingers and toes	Fingers, toes webbed until about 8th wk
Underdeveloped ears, nose, mouth	Underdeveloped ears, nose, mouth, and facial appearance not "human" until 10th wk

No genitalia evident in most cases	Genitalia ambiguous or underdeveloped until 12th wk
No fingernails, toenails	Nails undeveloped until 12th wk
Arms longer than legs	Arms longer than legs until 4th month
Clumsy movement, walk	Perceptible movements in 5th month
Skin color pallid (grey or white)	Pallid skin until 6th month
Skin color reddish	Skin reddish in 7th month
Skin wrinkled	Skin wrinkles in 7th month
Hairless bodies	No hair until 8th month
No eyebrows	Eyebrows evident in 8th month
Smooth skin	Skin less wrinkled in 8th-9th months

Note that many of these reported humanoid qualities are more characteristic of the embryo (i.e., aged through eight weeks) than of the fetus (nine weeks to term), suggesting that at least some matrices for the physical appearance of humanoid entities lie in early prenatal experiences. But there may be even earlier matrices. Grof describes experiences in which LSD subjects seem to undergo extreme spatial constriction so that they "tune in" to the "consciousness" of a particular organ or tissue of their own body, and even regress into a cellular or subcellular consciousness (11). Grof says that it is "commonly reported" by such subjects that they even identify with the sperm and ovum at the time of conception (12), and sometimes describe an accelerated process of embryogenesis and fetal development (13). While Grof concedes that the authenticity of such narratives is an open question, he states that he was able to get several independent verifications of supposed embryonal and fetal experiences (14).

One cellular component, not mentioned in Grof's data, seems potentially stunning in its

HUMANOID/FETUS SIMILARITIES IN CE-III REPORTS



Fig. 1-A. Travis Walton's fetal humanoid.



Fig. 1-B. Human fetus in its 3rd month. Note undeveloped facial features, head shape.



Fig. 1-C. Andreasson fetal humanoid with huge eyes but other features undeveloped.



Figs. 1-D/E/F. Fetal humanoids are the most common entity type. Even imaginary CE-IIIs report them (1-F). There are few more obvious BT parallels in abduction cases.

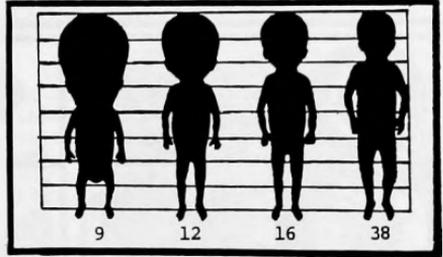


Fig. 1-G. Comparative body proportions of fetuses at 9, 12, 16, and 38 weeks. Most CE-III humanoids resemble fetuses between 9 and 12 weeks of age.

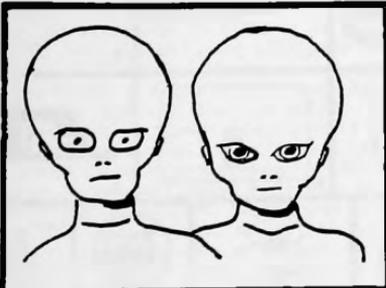


Fig. 1-H. Similarity of separate Moody and Walton humanoids was hailed as ET evidence, but both seem fetal and so support the BT hypothesis.

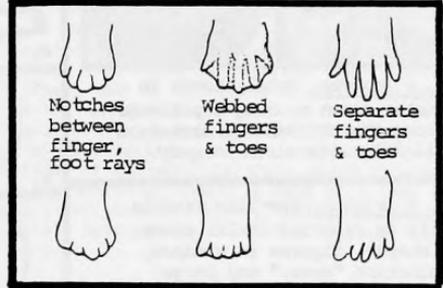


Fig. 1-I. Fetal development of webbed fingers and toes, a pattern in many entity reports.

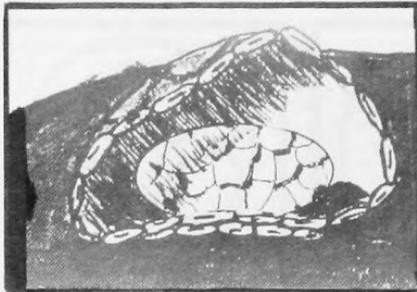


Fig. 2. Implanted human ovum (6 days old) with specialized cells (white) forming the embryonic disc, a possible UFO-mandala archetype.

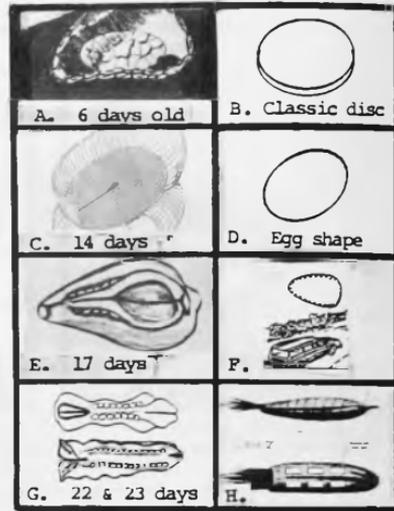


Fig. 3 (right). Similarities between UFO shapes and developing cellular tissues of the human embryo may support the speculation that Jung's archetypes have a physiological basis.

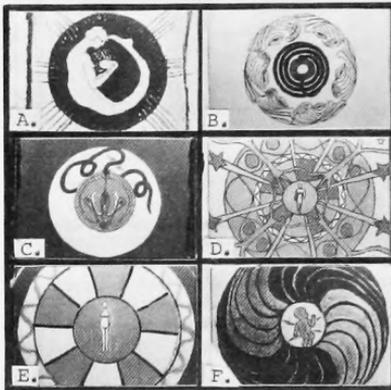


Fig. 4 (above). Natal themes in mandalas drawn by Jung's patients connect the UFO/mandala archetype explicitly with birth imagery.

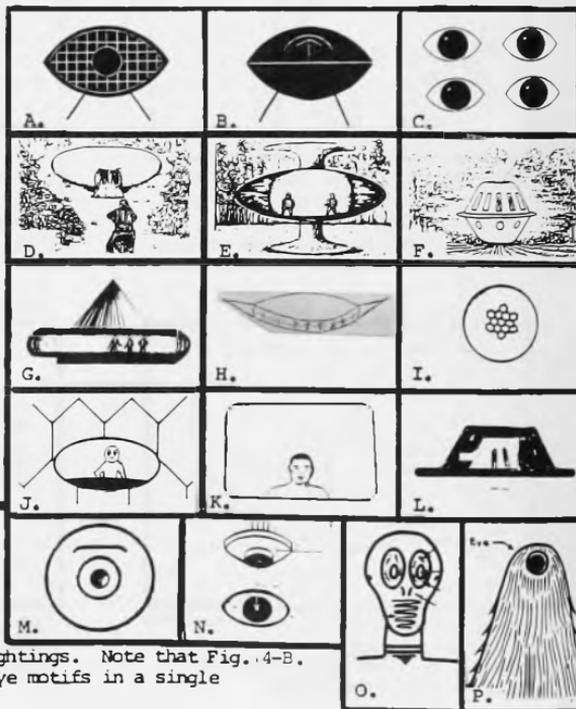


Fig. 5 (right). Eye-like mandala motifs in reported CE-III cases: UFO shapes, figures in windows, examination "eyes," and large eyes in entity descriptions all support a Jungian "eye-in-the-sky" mythical basis for UFO/entity sightings. Note that Fig. 4-B. (above) combines both the birth and eye motifs in a single mandala figure.

UFO implications. When the fertilized human ovum is six days old and attaches itself to the wall of the uterus, the distinctly embryonic tissue inside the ovum assumes an intriguing shape: it resembles a flattened, circular plate, the basic UFO pattern, and is known as the embryonic disc. Everything that will eventually become the adult human being is present, at least potentially, in the relatively few cells of the young ovum's embryonic disc. This stage of prenatal life is the first in which the fertilized tissue can be thought of as something integral, whole, or individual. We remember that the psychologist Carl Jung found an analogy between the shapes of "flying saucers" and "mandalas," which he defined as archetypal symbols of unity, wholeness, and individuation (15). If Grof's genetic memory data are valid, they could be interpreted as providing a physiological basis for Jung's theories on archetypal imagery and his related speculations on the collective unconscious.

At any rate, it is somewhat startling to realize that every human being who ever lived was--for a few hours at least--literally shaped like a UFO. With that in mind one can speculate: perhaps the embryonic disc does manifest itself as a Jungian mandala or saucer archetype in everyone's sensibility during the embryonic stage; later it could emerge as part of a percipient's UFO-related imagery. Thus UFO witnesses might have been predisposed to perceive saucer-shaped "somethings" in the presence of whatever psycho-physical stimulus constitutes the UFO phenomenon--though what witnesses perceive may be an archetypal echo of experiential imagery from their own prenatal development.

But the developing embryo evolves through other possibly UFO-related geometric forms as early as its third week of life: it is an oval by day 14, pear-shaped by the 17th, and about day 22 the beginnings of the brain and spinal cord have formed a comparatively huge neural tube down the length of the tiny embryo. The dominance of tube or tunnel imagery in CE-III's (as well as other analogs) is well established, and if these speculations have merit, the prevalence of tube/tunnel images may relate to one or more of several possible tube/tunnel archetypes in the birth process. In addition to the neural tube, other putative archetypes include the umbilical tube-placenta complex and the "birth canal" (i.e., cervical opening, vagina,

and surrounding tissues) experienced during normal birth.

The placenta is a circular, inverted-bowl-shaped organ which is connected to the fetus by the umbilical cord, a tube containing other tubes (veins and arteries) attached at the fetus' navel. Several abductees (e.g., Hill and Andreasson) have reported pain or distress in their navels during alleged examinations (16); many others use tube/tunnel imagery to describe UFO interiors or events--some maintaining that they were "sucked up" a tube (of light or other material) into the UFO. The physiological fact that body fluids are exchanged between the fetus and the UFO-shaped placenta, i.e., they are "sucked up" the umbilical tube, seems significant.

The umbilical cord recalls a hitherto inexplicable image, the seemingly solid flat-ended, retracting light beam. The umbilical cord, a solid tube descending from the placental "saucer," does have a flat end at the separation point, and is a possible archetype for the mysterious but oft-reported retracting beam.

An experiment in which imaginary abductions were given under hypnosis to persons born by cesarean section\* provides statistical evidence that tube/tunnel imagery relates to the normal birth process. Of eight cesarean subjects, seven used no tube/tunnel imagery in describing how they boarded or left the UFO, and there were few tube images throughout their narratives. The exception (subject #10) is interesting because she was at first treated as a normal premature birth until her mother hemorrhaged and a cesarean was necessary--but the subject had experienced an hour or so of Stage II trauma in the birth canal, perhaps sufficient time for the development of tube/tunnel imagery. Note also other possible exceptions: subject #5 boarded with the aid of a snake-like rope, #8 returned via a spiral stairway, and #9 described stairs unfolding from the bottom of the craft. All of these suggest not tubes but apparatus dangling from the UFO's underside--perhaps representing archetypes of the umbilical cord, which apparently can symbolize either a tube or a line as conditions permit. Again, there are several possible sources for tube-like imagery in BT events.

\*The study was conducted by Dr. W.C. McCall and the author.

RESPONSES OF TEN IMAGINARY ABDUCTEES  
WHEN QUESTIONED AS TO HOW THEY BOARDED AND LEFT THE UFO  
(EIGHT BY CESAREAN SECTION, TWO BORN NORMALLY)

	<u>HOW GOT ABOARD</u>	<u>HOW LEFT</u>
1) NORMAL BIRTH (DS)	"It opened up . . . and I crawled inside. . . ."	"A door opened and I left. . . ."
2) NORMAL BIRTH (RS)	"Through sound . . . instantaneous . . . transported by sound. . . ."	"Instantaneous return."
3) CESAREAN (TA)	"They transported me . . . materializing in another area."	"I was put back down."
4) CESAREAN (RG)	"Just appeared on board . . . materialized. . . ."	"I was placed there."
5) CESAREAN (CJ)	"A rope, like a snake, came out . . . grabbed me . . . pulled me up. . . ."	"They threw me out."
6) CESAREAN (KK)	"I thought myself aboard. . . ."	"Got off the same way."
7) CESAREAN (MO)	"I just found myself inside. . . ."	"I was zapped out. . . ."
8) CESAREAN (DG)	"I transported myself. . . ."	"Climbed down a spiral stairway."
9) CESAREAN (RB)	"Stairs unfolded from the bottom and I climbed up."	"They put me there . . . instantaneously. . . ."
10) CESAREAN (SB)	"I was sucked up like a vacuum hose. . . ."	"They threw me out. . . ."

Images of doors or passageways are nearly as plentiful as tubes in abduction reports. Most witnesses describe unorthodox doors which appear suddenly in walls or on an object's exterior, disappearing without a trace soon after. Such doors tend to open from the center rather than out or in, or have sliding panels. Some reports tell of doors which disintegrate or "explode" just before witnesses go through them. All these unusual doorway passages can be interpreted as suggesting another birth trauma event--the opening of the cervix. Aside from the extended time involved, cervical dilatation would be consistent with unorthodox modes of opening and closing doors. Supporting this idea is the fact that one of our "control" subjects, a normal birth, responded to a suggested situation of cervical dilatation with the comment, "It's like a door opening." Surely the birth process is a more likely explanation of the many doors and tubes/tun-

nels in narratives such as Betty Andreasson's (see below) than any plausible alien craft's interior architecture.

The idea that placental, umbilical, amniotic, and other archetypal forms appear in reported UFOs, entities, and related events sketched or described by witnesses (see Appendix II for examples) is admittedly as speculative as it is unusual. It is offered not as a conclusion about the BT/CE-III analog but merely as an interesting possibility which seems to support the BT hypothesis but which as yet cannot be proved.

However, if abductees indeed do develop their conceptions of humanoids largely from a fetal archetype, it is reasonable to expect that the surrounding tissues and other embryonic elements can stimulate witnesses similarly. Further, fetuses have been observed firmly

POSSIBLE PLACENTAL, UMBILICAL, AND AMNIOTIC SAC ARCHETYPES IN CE-III CASES

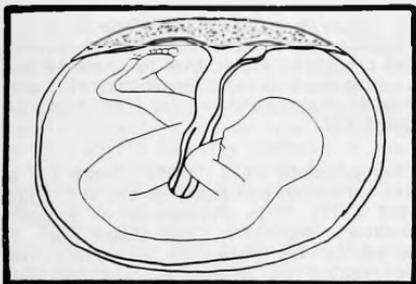


Fig. 6-A. Fetus in womb. Placenta may appear to be "above" or behind the fetus (cf. Fig. 6-D below).

Similarities between BT and CE-III data suggest an archetypal relationship involving the placenta, umbilical cord, and the amniotic sac. The placenta may emerge as a UFO shape and also as a backpack worn by entities. The umbilical cord suggests the tube leading from the backpack and also the often reported retracting light beam. The amniotic sac may have a ready analog in the various bubble-dome headgear and see-through UFOs reported.

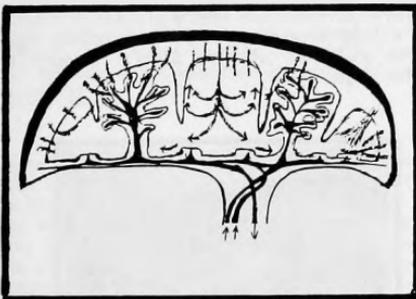


Fig. 6-B. Mature placenta and umbilical cord descending from its center present a possible archetype of UFO and its beam of light, as in (6-C).



Fig. 6-C. Many UFOs display a solid-like retracting light beam. Similarities in 6-B and 6-C suggest an archetypal relationship.



Fig. 6-D. Fetus, placenta, umbilical tube, and clear amniotic sac (5th month).



Fig. 6-E. 1973 entity wore backpack, tube, and bubble headgear—all possible BT archetypes.



Fig. 6-F. Windowed UFO & tube of light may also relate to placenta, umbilical, and sac.

grasping the umbilical cord, and also touching their body and everything else in the close confines of the uterus. All normal fetuses, then, may have a sense of body image and of various tissues which probably develops from the embryonic stage onward. Thus this aspect of the BT hypothesis may have validity.

The placenta may emerge in CE-III narratives as a UFO shape and also as a backpack allegedly worn by entities. The umbilical cord suggests the tube leading from the backpack, and it may also take the form of the retracting light beam. The amniotic sac may have an obvious analog in the various bubbledome headgear on reported entities, and also in the many see-through or windowed UFOs described by witnesses. In this connection, while skeptics have assumed that entity backpacks derive from astronauts' similarly bulky spacesuits, the fact that NASA has no see-through space ve-

hicles argues that images of backpacks as well as translucent UFOs are stimulated by psychological processes rather than by space technology. The most likely psychological source would be BT imagery and events. (Cf. Figs. 6-A through 6-F).

The placenta as a "craft" image can be seen in Christian and Buddhist art (cf. Figs. 6-G and 6-H). In Hildegard of Bingen's 12th-century depiction, the human soul is delivered to the fetus by an object from another realm; the object and its "delivery tube" attached to a maternal navel is an obvious placental/umbilical archetype. In an Indian relief, a "lily" growing on a stalk from the God Vishnu's navel bears the infant Buddha. In both traditions one sees a placental "craft" with a tube descending from it, showing that diverse cultures utilize BT/UFO imagery in similar ways.



Fig. 6-G.



Fig. 6-H.

PLACENTAL, UMBILICAL, AND AMNIOTIC SAC ARCHETYPES (cont.)

Both Figs. 6-G & 6-H emphasize placental/umbilical imagery. 6-G is a medieval Christian depiction of how the fetus acquires its soul: it is delivered by the squarish object which comes from another world. 6-H shows a lily, growing from the god Vishnu's navel, which bears the infant Buddha. In both traditions one sees a placental "craft" with a tube descending from it. Thus diverse cultures utilize BT/UFO imagery in similar ways.

There are many possible umbilical archetypes in traditional belief, psychology, and even fiction (cf. Figs. 11-A through 11-G). In Christian mythology, God impregnates the Virgin Mary with a beam from Heaven. However, the beam is actually a hollow tube through which the Holy Spirit (usually rendered in the form of a dove) descends. Another type of divine sky-beam can be seen in paintings of a beam of breath from God to Adam. The "third eye" of the Buddha is often portrayed as a beam, indicating again that beams from the sky are found worldwide. An interesting variation is described by one of Jung's schizophrenic patients: a sun with a "penis" tube hanging from it, which the patient associated with the wind (i.e., breath). Jung later found identical images in mysticism and mythology. Beams and tubes from the skies are also found in folktales such as "Jack and the Beanstalk," and in the tornado which whooshes Dorothy off in The Wizard of Oz.

One fascinating implication of the placental archetype relates to the winged entities which are occasionally reported. It may be that the wings of fairies and angels, like the entities' backpacks, relate to BT sources (cf. Figs. 14-A through 14-H). Further possible placental archetypes are suggested by the common pattern of "boxes" and "tubes" which are so consistently described by witnesses during recall of alleged physical examinations. Both "real" and imaginary subjects describe such implements, which often probe the subject's body or navel area. Both umbilical pain and currents of energy which probe the body are common BT data patterns--thus the boxes/tubes-BT connection (cf. Figs. 15-A through 15-F).

## II

In order to give context to the abduction/birth trauma parallels, it is helpful to show the nature and extent of perinatal imagery in a prominent abduction case. One such case is that of Mrs. Betty Andreasson of South Ashburnham, Mass., who says that about 7:00 PM on January 25, 1967 she was abducted from her livingroom by a group of alien beings. As recalled under regressive hypnosis ten years afterward, she said parts of her CE-III may have been witnessed by her father and 11-year-old daughter, although seven other members of

the family, who allegedly were put into "suspended animation," were not able to verify Betty's story (17).

Betty says her abduction began with a bright light which flashed outside her house, shortly after which a group of 4-foot-tall beings floated through her kitchen door. They communicated with Betty, then floated her outside and into a waiting craft where she was examined, immersed in a liquid, and then seemingly taken for a journey into alien realms. At the climax of her adventure she saw a huge bird which spoke to her, then, phoenix-like, consumed itself in flames, an event which Betty, a devout fundamentalist Christian, interpreted in religious terms. Then her captors returned her safely home. The alleged abduction had lasted about 3 hours and 40 minutes.

The Andreasson case is useful for purposes of comparative analysis because it has been laboriously investigated by a group of dedicated ufologists, the main witness is considered reliable, and the case details are representative. Further, Betty is a competent artist and was able to provide many sketches of her adventure. In short, the Andreasson CE-III is about as reliable and detailed as any abduction case we are likely to find. At the same time, it has significant implications for UFO abduction research, for it contains a wealth of perinatal images and events which support a non-physical or psychological interpretation of this case and of the UFO abduction mystery generally.

The Andreasson case offers several clear birth trauma image parallels. For example, Betty's humanoid entities were about 4 feet tall, with grayish skin, oversized heads, huge eyes, and underdeveloped noses, ears, and mouths. They were typically fetal humanoids in appearance, though they behaved like apparitions in passing through solid doors and materializing at will. The leader seemed to change his facial features so that he became more fetus-like in his final meeting with Betty.

The richest event in terms of perinatal imagery occurred in what Betty described as the Cylindrical Room, where she was enclosed in a clear plastic chair with a fitted cover, which her captors filled with gray fluid. She breathed through clear tubes which fit into her nostrils and mouth. A telepathic voice told her to close her eyes. Suddenly she felt

pleasant vibrations, the fluid whirled, she was fed some sweet substance through the tube in her mouth, and she was relaxed and happy. "Oh! This feels good!" she exclaimed. Floating, tranquilized, she became one with the "undulating fluid." After a time the fluid was drained, she was taken out, and she realized that her head hurt.

The scene is an obvious return to the womb: the Cylindrical Room itself is only one of several womb echoes in Betty's narrative; the transparent chair suggests the amniotic sac in which Betty floated in a fetal position; the gray fluid is the amniotic medium; the breathing and feed tubes are the umbilical cord. Swallowing of fluid is a common fetal event, and acute gustatory sensations are common in Grof's perinatal subjects (although Grof says that sweet tastes may also originate in positive breast experiences) (18). The tranquilizing undulations and vibrations recall a reversion to a highly positive intra-uterine experience. Betty's headache may be a manifestation of the onset of another part of the remembered birth process.

It should be pointed out that Betty's immersion in fluid is not unique to her abduction. Similar events were reported in a Brazilian CE-III and also in the Garden Grove case (19).

Betty spent much of her time on board the UFO "floating" from one womblike room to another, through tunnels and on elevators or other counterparts of the birth canal. These familiar tube/tunnel images recur in several guises in Grof's narratives: from tubes of light to columns, whirlpools, cosmic maelstroms, engulfing monsters, and holes through the earth. Betty's tunnels varied in length but typically ended with doorways into brightly lit, dome-shaped rooms where she was undressed, examined, "cleansed," or whatever. The doorways, like those in many CE-IIIs, suggest the cervical opening: usually a bare wall seems to separate with a soft "whoosh" on approach and unites again afterward, leaving no trace; a circular membrane and some mirror-like doors which Betty crashed through harmlessly recall similar "exploding" doors in the Garden Grove case. There are more than a dozen doors and tunnel-like passageways in the whole of Betty's adventure, a number sufficiently high in itself to suggest a psychological explanation of her narrative.

During Betty's examination, which she said occurred in a bright "big room," the aliens inserted needle-tipped tubes into her nasal cavities and (as with Betty Hill) into her navel. Betty had been told that the navel probe was a test for "procreation" (in the Hill case it was for pregnancy), but afterwards the aliens said that there were "some parts missing." Betty had had a hysterectomy, and the fact that she integrated this personal memory into the event can be seen as a reliving of her own medical history--a common pattern in abduction narratives. The hysterectomy is also one of several elements in Betty's examination manifesting the bodily dismemberment motif, which is occasionally found in CE-IIIs and which is described explicitly in Stage III BT narratives (20). (Body dismemberment is also a major segment of the shamans' trance experiences; see Appendix III-II.) The needle-tipped tubes caused Betty a good deal of pain and discomfort, but Grof's description of umbilical pain in a perinatal Stage IV narrative anticipates this part of the Andreasson abduction (21):

. . . a specific complex of unpleasant symptoms . . . piercing and penetrating pains in the umbilical area, which usually radiate and are projected to the urinary bladder . . . or the uterus. They are accompanied by . . . feelings of agony and emergency, sensations of dramatic shifts within the body. . . .

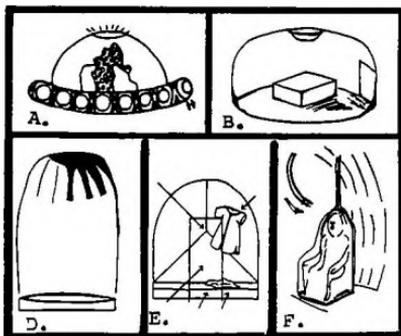


Fig. 7. Birth imagery in the Andreasson case: four of the womb-shaped rooms which Betty described, and a typical womb-shaped UFO (7-A).

"BIG ROOMS" IN CE-III CASES AND OTHER TRADITIONS

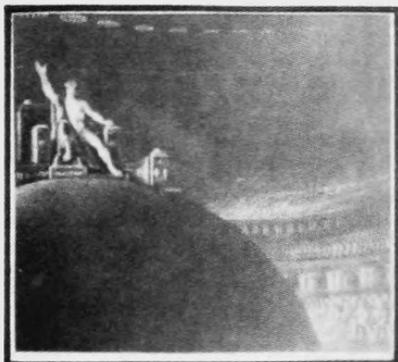


Fig. 8-A.

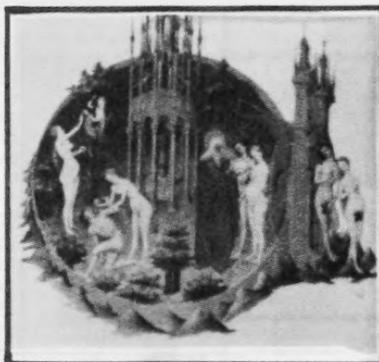


Fig. 8-B.

Figs. 8-A/B. Two traditional depictions of hell and the Garden of Eden. Both show BT motifs: hell is a vast "big room," while paradise is likened to a womb. Metaphors of hell and paradise occur often in Grof's "bad-womb" and "good-womb" experiences and elsewhere during subjects' BT revivifications.

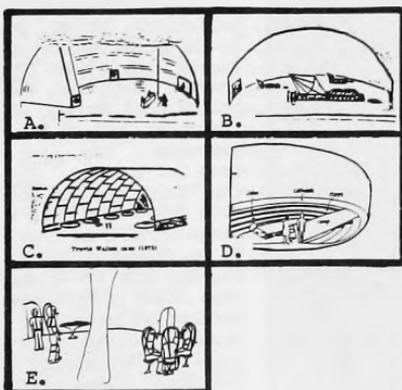
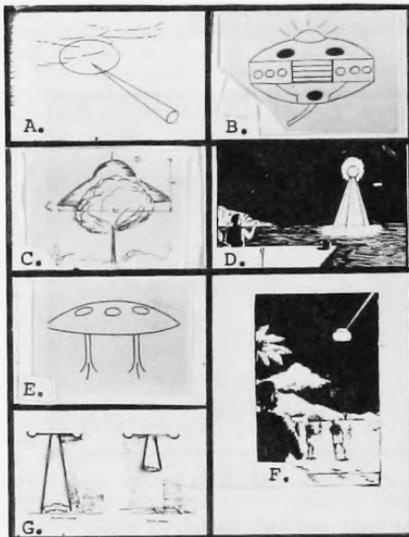


Fig. 9. "Big rooms" in various abduction accounts. "Big rooms" are specifically related in Grof's data with Stage IV of the birth process—the moment of separation from the mother and attendant sense of spatial expansion.



POSSIBLE UMBILICAL ARCHETYPES IN UFO REPORTS AND TRADITIONAL BELIEF

Fig. 10. Possible umbilical archetypes in UFO reports: "solid" light beams, tube-like, with flat "ends" appear frequently in UFO sighting accounts. They may derive from the placental/umbilical tube archetype. This tube-of-light image is one of the most common patterns in all types of UFO reports (not only CE-IIIIs).

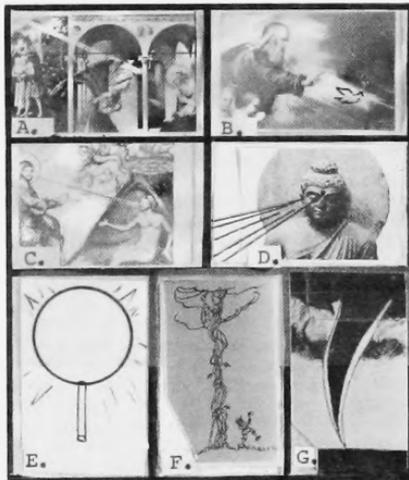


Fig. 11. Possible umbilical archetypes in traditional belief, psychology, and fiction. In Christian mythology, God impregnates the Virgin with a beam (Figs. 11-A/B) from Heaven. Note that the beam is actually a hollow tube through which the Holy Spirit (rendered here in the form of a dove (11-B) descends). Fig. 11-C shows a beam of breath from God to Adam. 11-D shows a beam from the "third eye" of the Buddha, indicating that "sky-beams" are found world-wide. The image in 11-E is from Jung (Works, V. 9, Pt. 1, pp. 50-53). It is a sun with a tube hanging from it—a surprising vision which Jung finds in mysticism, mythology, and in certain schizophrenic patients. The tube is often associated with wind or breath (as in 11-C) and is usually connected to the sun (or God). Figs. 11-F (Jack and the Beanstalk) and 11-G (a tornado such as that used to convey Dorothy to Oz in The Wizard of Oz) illustrate the use of sky-tubes in fiction. Whether or not all these tubes relate to BT events, they are (11-G excepted) clearly psychological in nature and origin. Thus no extraterrestrial theories need be invoked to explain images and events which may be based upon such archetypal visions—e.g., UFO-related tube and tunnel imagery.

This situation is repeated with surprising consistency in Betty's narrative (22):

I can feel them moving that thing . . . he's going to put that in my navel! O-h-h! I don't like this . . . I can feel them moving that thing around in my stomach or my body. . . . Oh! He's pushing that again . . . around, feeling things. . . . Feels like he's going right around my stuff inside--feeling it, or something with that needle.

The aliens told Betty that they were "awakening" something with their probing, which is symbolically consistent with the dismemberment myth--in shamans' lore, ego death (dismemberment) precedes the rebirth of a new, reawakened self and sensibility. However, this death/rebirth experience was articulated more fully in Betty's case by the phoenix.

Some of the Andreasson case investigators were apparently troubled by Betty's phoenix vision, perhaps embarrassed by its religious/mythical connotations, or afraid that this and other parts of her narrative may be thought mere hallucination or fantasy. Yet to Betty, the phoenix segment was as real as any other and in some ways more significant since she interpreted it as an authentic religious experience. She heard a voice which she thought was that of God saying, "I have chosen you to show the world," apparently because of her sincere faith. Though interpretations of the event as fantasy or spontaneous hallucination seem equally probable, Grof says that the phoenix image is implicit in many Stage III narratives describing a purification by fire (23):

One important experience . . . is the encounter with consuming fire, which is perceived as having a purifying quality. . . . The fire appears to destroy everything that is rotten and corrupt in the individual and prepares him for the renewing and rejuvenating experience of rebirth. . . . A very appropriate symbol associated with the idea of the purifying fire seems to be that of the phoenix, the legendary bird who sets his nest on fire and finds his death in the flames; the heat of the fire facilitates the hatching of a new phoenix from an egg in the burning nest.

In Betty's vision, a familiar variant on the tale, a "worm" (i.e., the fire-impervious salamander of myth) emerged from the ashes. At the same time two things seemed to be happening to her, both of which are well-established perinatal events: 1) she felt an intense, shivering chill come over her, whereas a moment before she had complained of equally intense heat (alternating chills and hot flushes are common in Stage II narratives) (24); and 2) Betty described "the worst thing I've ever experienced . . . whatever that was that was going through my body--it felt like something piercing every cell in my body" (25). Grof reports that Stage III subjects describe similar agony (26):

The intensity of painful tension reaches a degree that appears to be far beyond what any human can bear . . . feelings of powerful currents of energy streaming through his whole body.

The evidence suggests that Betty's phoenix owes more to BT imagery and the fact that she had read about the myth, than to a CE-III. The investigators were wise to be skeptical. However, though her interpretation of the event was dubious, Betty's descriptions here as throughout her experience seem truthful.

The fact is that abductees tend to tell the truth as they have experienced it, though this point is lost on professional UFO debunkers who seem obsessed by a need to ridicule the ETII and any UFO witnesses, but who show no capacity for helping us to understand the phenomenon. The substantial agreement of imagery and events among the 200 or so abductions and their parallels with BT imagery provide objective evidence that abductees generally speak truly, although actual events are something else again. In Betty's case, the abduction was "real" in that it had psychological validity for her. That fact gives investigators something quite real to go on.

### III

It is beyond question that there are extensive similarities between perinatal imagery and UFO abduction narratives, as the presentation of parallels from both areas and an analysis of a prominent abduction have shown. It may be thought that there are

reasons for these similarities which could still allow for a tenable physical hypothesis about UFO abductions, but one must then explain the similar parallels among the other abduction analogs. (See Appendix III for visual imagery from some analogs.) Whether or not perinatal events are the fundamental matrix for all the other analogs, it is clear that CE-III reports employ perinatal images and incidents and that abductions--whatever else they may be--are one of many possible expressions of revived perinatal imagery and so have to do with inner rather than outer space.

There remain some apparent puzzles. Multiple witness abductions, for instance, have always seemed difficult to explain. Yet a careful reading of hypnotic transcripts indicates that most of the dual and multiple witness abductions in the literature are either incompletely investigated or lacking in independent corroboration. These cases include Betty Hill, Betty Andreasson, Hickson and Parker, Sandy Larson, Pat Roach, Judy Kendall, and the Garden Grove case (the last two I have researched personally).

The 1976 Liberty, Kentucky abduction is instructive, for it is one of the very few in which all the witnesses were extensively interviewed and hypnotically regressed. The transcripts of the three women involved reveal that each had a separate, subjective adventure rather than a consistently shared abduction experience. Thus their fascinating stories do not corroborate claims of abduction, although the probability of a shared hallucinatory close encounter of the first kind seems fairly high.

A number of multiple-witness close encounters seem impressive. Cases such as the Kelly-Hopkinsville and Reverend Gill close encounters, and the first part of the Travis Walton case (a CE-II sighting of a brilliant light) typify ufology's most formidable mysteries. Yet Allan Hendry's discussion of identified flying objects reported as UFOs with great assurance by multiple witnesses (27) dramatizes some of the limitations of human judgment. We should be cautious about even the best cases.

If multiple-witness Ce-IIIs exist, they may be explained by multiple hallucinations (such as folie a deux, imaginary companions, and mass hallucinations (28)), which are real

if rare phenomena; and it is possible to see multiple-witness Ce-IIIs such as the Andreasson case as hallucinatory in nature. We should remember that multiple-witness testimony does not guarantee the physical reality of an event but merely its subjective psychological validity for the witnesses. Even though we do not yet understand everything about multiple hallucinations, the probability that this obscure process plays a part in some Ce-IIIs seems more likely than the alternative speculations often repeated by credulous ufologists--that the similarities in imagery among abduction analogs stem either from mere chance or from smart-ass aliens bent on confusing us!

Another traditional puzzle centers on physical effects Ce-IIIs. The problem here is not the absence of alleged physical evidence but its interpretation, for physical evidence is notoriously ambiguous--as anyone can appreciate who has followed the Turin Shroud controversy, or for that matter the century-long windmill-tilting over Darwin's theory of evolution. The inescapable fact is that no abduction case has thus far presented unambiguous physical or physiological evidence which compels us to conclude that a UFO landed in that spot, or left that mark on an abductee's skin, or abducted that family. I am speaking not of probabilities or possibilities but of certainties--such as the notorious "crashed saucers" and Little Green Men would provide (if only they could be coaxed out of Hangar 18, or maybe Cloudland). One might object that unrealistic certainties are not necessary for theorizing about UFOs. But as a scientist-/media-celebrity (and sometime UFO debunker) recently observed, extraordinary claims demand extraordinary proofs, and he's right.

We cannot yet explain what stimulates the sequence of visual imagery and events which makes up an abduction. That is the most provocative mystery about Ce-IIIs. Our inability to explain the entire UFO abduction enigma, however, does not obscure the clear and reasonable inference that abductions are primarily a psychological phenomenon.

There are new mysteries: we do not know how perinatal images form in the fetus, nor how BT imagery is revived with even partial accuracy during drug therapy, hypnosis, or in spontaneous waking sessions (as the few non-hypnotized abductees seem to have done). However, the readiness of hypnotized subjects to

build an abduction fantasy on a base of perinatal experiences provides still another cautionary note about the use of hypnosis in UFO abductions. This caution would seem particularly necessary in investigations such as Betty Andreasson's and the Garden Grove case (of which I have personal knowledge), where a witness was hypnotized repeatedly over several weeks by a group of investigators who were

(however competent and earnest) perhaps too credulous. Repeated hypnosis sessions are suspect in that they invite elaboration and fabrication which can be encouraged by feedback questions from investigators, past and current reading by the witness, and the ego-massage situation posed by a professional investigative group and a lone abductee with a wild tale to tell to eager ears.

POSSIBLE UMBILICAL ARCHETYPES IN ENTITY DESCRIPTIONS

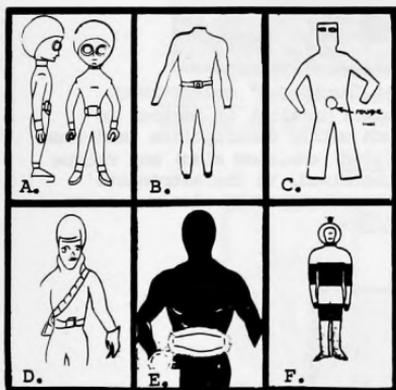


Fig. 12. Possible umbilical archetypes: navel area emphases in selected entity reports.

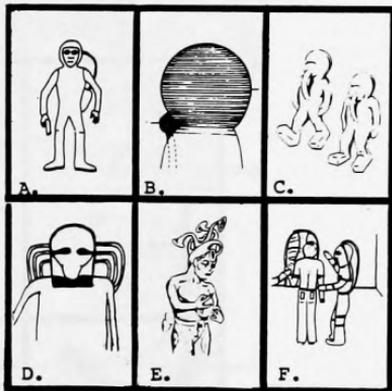


Fig. 13. Possible umbilical archetypes: tubes in reported entities' equipment. The previously enigmatic "head-tubes" in 13-E are seemingly elucidated by the BT hypothesis.

POSSIBLE PLACENTAL ARCHETYPES IN ENTITY DESCRIPTIONS AND "EXAMINATIONS"

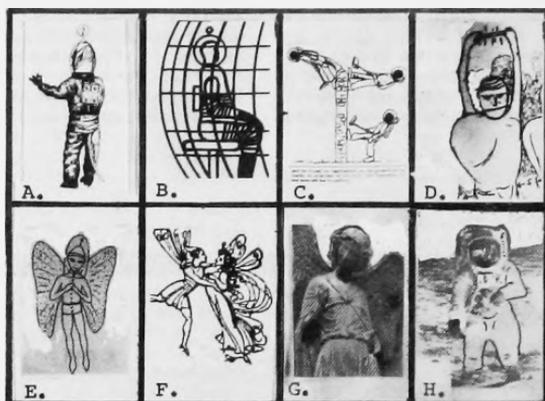


Fig. 14. Possible placental archetypes: "backpacks" and/or other phenomena on entities. Placental-backpack parallel is obvious in Fig. 6-D (above), and suggests that such entity descriptions (and thus seemingly deformed (14-D) and winged (14-E) entities also) may relate to BT events and not, as is commonly theorized, to the astronauts' bulky spacesuits (14-H). The placental archetype may also relate to fairies' and angels' wings (Figs. 14-F/G).

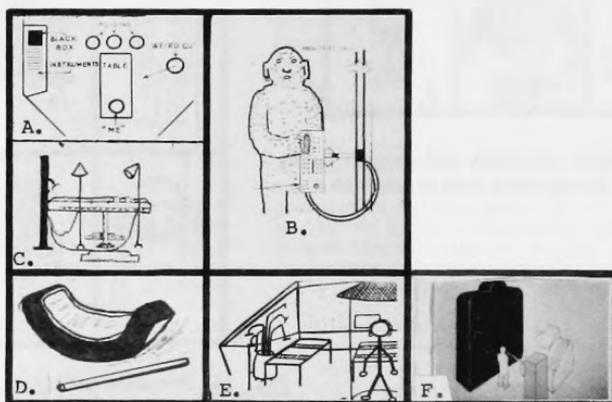


Fig. 15. Possible placental archetypes: "boxes" and "tubes" used during alleged examinations. All the above are from "real" abductions except 15-E, which is from an imaginary abductee's narrative.

POSSIBLE AMNIOTIC SAC ARCHETYPES IN ENTITY AND UFO DESCRIPTIONS

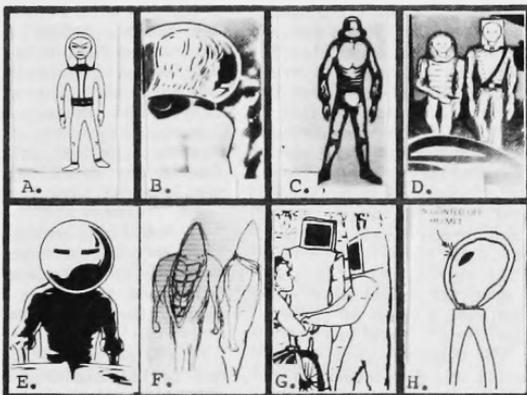


Fig. 16. Possible amniotic sac archetypes: bubble-dome headgear on various entities.

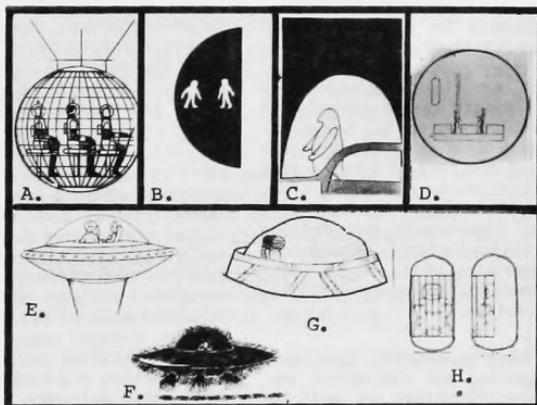


Fig. 17. Possible amniotic sac archetypes: groups or single entities in transparent craft. Note that again an astronaut parallel is not probable here, since there are no "see-through" windows in current NASA craft.

## IV

This paper has attempted to show that UFO "abductees" unconsciously use major components of the birth process as a matrix for a fantasized abduction experience. Many abduction/BT parallels are obvious: the fetus, taken from warmth and comfort and subjected to prolonged distress in the birth "tunnel," emerges into a strange world with bright lights, unconfined space, "entities," an "examination," and various sensory stimuli. Similarly, "abductees" are levitated through a tunnel of light into a UFO's vast, brilliant interior where alien creatures examine and probe their bodies, often painfully. Additional parallels include such staples of CE-III reports as a loss of time, absurd events, womblike rooms, umbilical pain, sexual seduction, and a sense of ineffability about the experience. There are many, many others. Again, the dominant entity type described in both Ce-III and BT narratives is humanoid, and closely resembles a fetus or embryo. The birth process is so idiosyncratic and various that no two Ce-III narratives are ever exactly alike--though all are very similar. Thus this research successfully explains how two different abduction "victims" can sometimes recall virtually identical experiences, and also accounts for minor inconsistencies among such narratives.

It is important to realize that anyone can revivify his own BT events in the presence of an appropriate stimulus (hypnosis, drugs, or apparently even the UFO phenomenon), with the revivification taking the form of a hallucination, a religious experience, a UFO abduction, or any other abduction analog. Inasmuch as a subject's perinatal experiences may include random data from hallucinatory, remembered, and fantasized imagery as well, it is clear that researchers should utilize hypnotically derived data with caution.

There remain many unanswered questions about abduction reports, but ufological research into BT revivifications as well as multiple hallucinations, fugues, and similar psychological phenomena is likely to provide answers.

Three points are emphasized in this paper: First, birth trauma imagery originates in witnesses' perinatal history and associated psychological experiences rather than in ab-

ductions, and so the presence of BT images invalidates any CE-III narrative in part or whole. Second, BT imagery thus provides a criterion with which investigators can separate hoaxes, subjective fantasies, and other earthbound data from any putatively real abduction by alien creatures. (Henceforth, to be credible, abduction accounts may have to avoid obvious BT imagery such as bright lights, tunnels, big rooms, fetal humanoids, physical examinations, retracting beams, etc. However, few if any non-BT abduction narratives presently exist, and I suspect I know why. . . .)

The final point is equally significant: the birth trauma hypothesis is testable. The presence or absence of BT/CE-III data parallels, and therefore the validity of the BT thesis, can be determined in a variety of ways:

(1) Abductees' birth and medical histories can be explored through interviews with witnesses and their families. If any abductees who report Stage III-IV data such as dismemberment, head pressure, or relief were cesareans (and thus unlikely to have experienced later perinatal phenomena), doubt would be cast on the BT theory. If no such abductees were found to be cesareans, the BT theory would be strengthened. Further, medical histories, especially hospitalizations, can be scrutinized for possible data parallels with images and events described during alleged examinations and related treatment by supposed aliens.

(2) Abductees' narrative reports can be searched word-by-word for BT imagery and events (as was done with the Andreasson case above). Narrative details may become relevant only after a BT analysis: one abductee said she had to "turn sideways" in order to wedge her shoulders through her UFO's doorway (29), a possible echo of fetal rotation during birth; another witness reported being held fast by a jointed metallic "clamp," which then twisted him, hurting his back (30), suggesting a forceps-aided delivery.

(3) Other BT/CE-III parallels may be uncovered through hypnotic revivification of the witnesses' perinatal histories. If performed professionally and interpreted cautiously, hypnosis can provide a useful investigative tool for abduction researchers.

The birth trauma hypothesis of the origin of fallacious UFO abduction reports is one of the very few "falsifiable" hypotheses which have ever been proposed about this most sensational segment of the UFO phenomenon. If ufology is ever to become a truly scientific discipline, viable hypotheses will have to be offered--and also tested. In this instance, serious and objective investigators should inform themselves about perinatal events or else utilize hypnotherapists or others experienced in birth trauma recall. Although verifying abductees' medical and birth histories should be relatively easy, other BT data may be more difficult to find or prove; however, the attempt should be made. Researchers who wish to test the BT hypothesis are urged to inform me of their results. One possible additional value of such data is that a causal relationship could thus be determined between distinct events of the birth process and specific re-identification imagery, something which Grof's experiments were unable to provide.

The subject of UFO abductions is intriguing to the public for the same reason almost any scientific body (no doubt thinking "funding") is apathetic: both groups, in different ways, link abduction stories with the idea of Little Green Men. But these groups' attitudes might reverse if abductions were identified instead only with interesting (and perhaps fundable) clinical psychological problems such as multiple hallucinations, fugues, or other altered states of consciousness. Whatever the nature of daylight discs, nightlights, and other close-encounter aspects of the UFO phenomenon, abductions seem to yield to a psychological research approach. It seems to me that, until the abduction witness's psychology is made the main focus of investigation in CE-III cases, and the ET and other fantastic hypotheses are allowed to await whatever extraordinary proofs might be their destiny, abduction researchers won't attract--nor will they deserve--serious and widespread scientific attention.

#### DISCUSSION

?? Can you give me a five-minute narrative of a UFO abduction report that closely parallels the birth trauma experience?

L: It took me five months to write these 22 pages, so I can't perhaps add to it in this amount of time. I thought it was blatantly obvious from that one example, and I was hoping to generalize from that. We've worked with 35-40 abductees and imaginary people, and another ten cesarian people, and we've had many parallels. I must say that there are Jungians present, and I don't know if they feel the urge to respond to your comment. But it's like this: if Hume has changed the way we look at the world, Freud has changed the way we look at flagpoles. OK? And we can never look at them in the same way. We've lost our innocence, if that's what it was. And if it's English departments or whoever is guilty for this, I don't know. But I think that it's a way of changing views, and I'm hoping to change some of our views. It seems to me that something like this should have been forthcoming from people other than English department people--the psychologists, if you're out there--or if you're not there, this says something too. They should have done something about this long before.

?? If everyone of us have been born and subject to birth trauma, why don't we all have abduction scenarios?

L: We would get the same imagery from people, whether they're imaginary, or so-called real or actually traumatized in Montana at three in the morning.

?? Are there any abductions you cannot relate to the birth trauma experience?

L: Few or none. I don't find any that don't have birth trauma imagery. There is one--I think CUFOS sold a book about some affair in the nineteenth century that I haven't looked at closely--it may or may not have that. [It was not an abduction. Ed.]

- ?? You seem to be discussing a unique form of CE III. Can you draw a distinction between these and the Father Gill case and the Pecha case?
- L. Very definitely, yes. I've been trying to make it clear three times here. I'm talking only about abductions. OK, I believe there is a UFO phenomenon. All right? That's the party line, I guess. I believe it's unexplained at the present time, OK? I believe that CEIIIs involve some very weird goings-on. I'm just saying that CEIIIs, or abductions as I see them, do not involve extraterrestrial or any other extraordinary event.
- ?? Is all experience reducible to common psychological denominators--whether it's a real experience or a totally psychological one?
- L. I think there's something to what you say. Again it's partly due to the fact that an English professor had to do this work. It's properly the work of psychiatrists or psychologists.
- ?? How do you defend the thesis that birth trauma imagery is the non-parsimonious explanation for such similarities between humanoid features and those of infants? You're invoking an explanation which is generally not accepted by the scientific community.
- L. We're here because we're not accepted by the scientific community. I don't think that that's necessarily relevant, but I don't know what you mean by "non-parsimonious". What does that mean?
- ?? There may be simple cultural explanations without bringing Jung or Grof into the picture.
- L. There very well may be simpler explanations, and I think it's up to you to provide those in response to this paper.
- ?? You talk about using Jung's book, but he did include data from CEIIIs that are not abductions. How do you account for that?
- L. I do include data from CEIIIs that are non-abductee type things and I respect [the fact] that these are the most common type of entity. As for using Jung and so forth, I thought that I used him judiciously, of course, as I would.
- ?? How do you have memories in the fetal stage of the embryonic disk?
- L. The embryonic disk--this is hard. As Dr. Hynek said recently in an article responding to something I had written, these are fascinating problems for psychologists. If we know this is apparent data, there may be a mind here--something akin to mind. And I think they should be looked at. We don't know why turtles can find their way 9,000 miles across the ocean in an egg. How does it get there? We don't know. It may be on the molecular level, rather than the neuron level. We don't know.
- ?? Would you construct a hypothetical situation that would not contain any birth trauma imagery?
- L. I've already done that negatively. I said that the ones that contain these things are commonly found in Europe, in the people you've dealt with, in the people we've dealt with, the people all of us are familiar with. I think that we could use this as a means of determining that some must be fallacious. If we get an abduction, preferably multiple, and it doesn't have any of these familiar images in it, then that's something to look at.

?? What good is a hypothesis if it's not falsifiable?

- L. If you can tell me that your man [who has reported having had a metal clamp on his shoulder] did not indeed have a forceps-aided delivery, then that would be interesting data and I would like to see that. And I would like to see all the people who had reported body dismemberment who did not have a regular birth, but were cesarians and therefore didn't go through late stage [three and four] birth trauma--this is a falsifiable hypothesis. It's the first time we've had anything like this with abductions. Whether you like it or not, I think it's very important.

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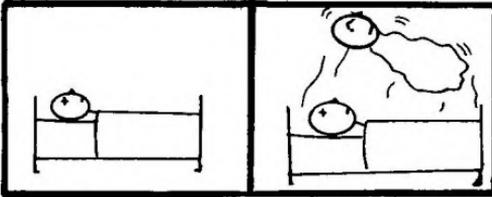
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- 3) I was given this information by a professional clinician with extensive experience in experimental and medical drug therapy programs.
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- 10) Information for this section was supplied by the following: Blechschmidt, Erich, Beginnings of Life (New York, 1977); Davies, Jack, Human Developmental Anatomy (New York, 1963); Moore, Keith L., The Developing Human (Philadelphia, 1977); Luchmann-Depléssis, H., et al, Illustrated Human Embryology, Vol. 1 (New York, 1972).
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APPENDIX -- ABDUCTION ANALOGS

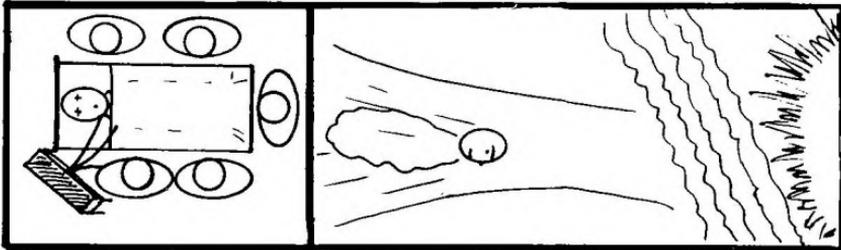
## I. NEAR-DEATH EXPERIENCES

Some of the many UFO-NDE parallels: a sense of floating (OOB), the examination-resuscitation table, the tube/tunnel imagery, the "border" or doorway, the exotic "being of light," the "TV screen" life review, the return, and the usual aftermath. The aftermath is a recognized psychological effect, and writers such as Kubler-Ross emphasize its significance for the NDE witness's personality: his life is never the same. This can also be said of most abductees.



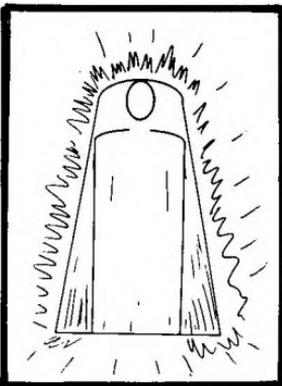
I-A. Subject "dies"

I-B. Conscious, subject seems to have an out-of-the-body experience.



I-C. Subject often reports hovering near ceiling and watching while resuscitation efforts proceed.

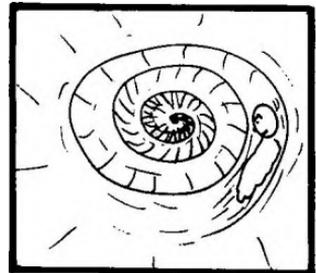
I-D. The subject floats through a "tunnel" to a "border" (often of water—perhaps suggestive of the amniotic fluid), beyond which is a brightly lit area, and a "being" . . .



I-E. The "being of light"



I-F. Subject sees a "TV screen" review of his life.



I-G. Subject is returned and wakes up in his own body again.



II-A. Black Elk in trance (1) is guided to heaven through a cosmic tube/tunnel by a spirit bird.



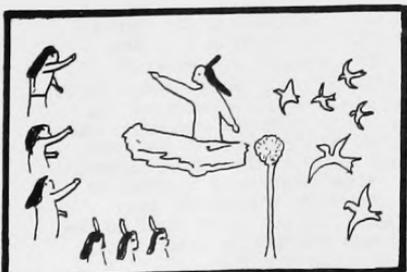
II-B. The "flaming rainbow tepee" where Black Elk spoke with "grandfathers." Note BT/UFO shape of tepee.

APPENDIX III—ABDUCTION ANALOGS: II. SHAMANS' TRANCES

Amerindian shamans like Black Elk, an Oglala Sioux, believed that they could travel from earth to other worlds via a "cosmic pillar," often symbolized in sketches by a pole or tree (II-A). Black Elk's typical trance started beside a tree (pillar). Shortly a "spirit guide" bird led him upward through a tunnel-like aperture and thence upward into a "flaming rainbow tepee" (II-B) where Black Elk met and communicated with a group of "grandfathers." (Note the womb/UFO shape of the tepee.) At this point (II-C) in many accounts the shaman is forced to undergo painful bodily dismemberment—a demon removes every organ, bone, and even blood cell in his body! But everything is then replaced, after being cleansed and purified, and lo! the shaman is spiritually and physically reborn (a rich echo of BT imagery), and is thus ready to return to his people with renewed spiritual energies. Sometimes (II-D) Black Elk was returned by a "little cloud." A cave painting (II-E) (12,000-30,000 B.C.) indicates the antiquity of this analog—an entranced shaman lies beside a spirit-guide bird atop a pole (pillar). Clearly, abduction analogs have been around for a long while . . .



II-C. Asiatic shaman being dismembered (a rebirth rite) by Vishnu, recalling similar events in abductions.



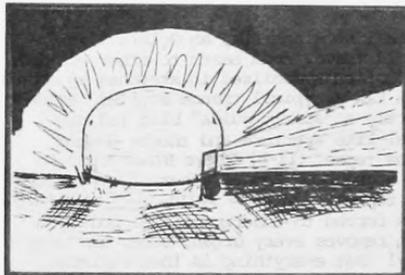
II-D. Black Elk returned from sky on a UFO-like "cloud."



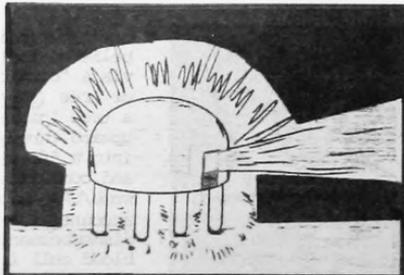
II-E. Shaman in trance, spirit bird on pole in this cave drawing indicate age of this UFO abduction analog.



III-A. Brownies on their womblike "fairy mound" during nighttime revelry. Note their fetal appearance: diminutive, frail, large heads, obscure gender, and in close-fitting apparel, i.e., skin tight.



III-B. Fairy mounds appeared suddenly at night, light streaming from an open door. Unwary humans who entered, it was believed, rarely escaped. Womb/UFO shape is obvious.



III-C. Sometimes the fairy mounds were said to raise up on beams of light and hover over the ground, an obvious nuts-and-bolts UFO parallel.



IV-a. An Algonquin sky-maiden abduction (in reverse).

#### APPENDIX III—ABDUCTION ANALOGS: III. FOLKLORE

One of the richest sources of abduction lore before CE-IIIs is provided by Anglo-Saxon folklore. The immensely diverse and abundant traditions contain many abduction parallels, among them bright lights, levitation, big rooms (some of the biggest big rooms, since so much of the "little people's" activities were conducted in underground caverns), varied but largely fetal humanoid entities, messages (often threats or curses), and usually a potent aftermath. (acknowledged by words such as "pixilated"—pixy-led, or mentally confused). Little people lore is also characterized by a wealth of secret (disappearing) doors, tube/tunnels, and womblike images.

#### IV. AMERICAN INDIAN FOLKLORE

IV-A. In this Algonquin Indian star-maiden myth, there is an abduction—but reversed! A brave has captured a beautiful maiden from a group which came down to earth in a flying basket. Algonquin myths have a number of sky-traveling creatures, contacts between earth and heavenly entities, spirit-guides, and the like. The star-maiden pictured eventually was able to return to her sky home, but she came back years later, again in the flying basket, for her brave. After many years together in the sky world, they were transformed into white falcons and lived out their lives on the prairies. Although the myth is traditional, the illustration dates from 1914.

## THE CONTACTEES: A SURVEY

GORDON<sup>1</sup> MELTON

In the 1950s, in response to the flying saucer phenomenon, there arose a group of people who claimed that they had personally contacted the occupants of these odd craft. They asserted that the saucers were in fact space craft and the occupants our brothers and sisters from space. A few even claimed to have traveled to distant planets or taken a ride in space.

That such people began to populate the gathering of flying saucer buffs became a concern of many who proceeded to condemn them as kooks or dismiss them as the lunatic fringe. There were few who saw any value in what the contactees, as they came to be known, had to say. They were an embarrassment to sober research into the unusual aerial phenomena called unidentified flying objects.

During the 1970s, however, ufologists have begun to take a new look at people who claim direct contact with flying saucer entities. They have been ascribed a place in UFO research as "close encounters of the third kind" and special interest has arisen around a particular CEIII, the abductee. Leo Sprinkle began annual gatherings of "contactees" in 1980.<sup>1</sup> Rarely, however, have contemporary researchers checked their cases in the light of the prior claims of such contact. This paper is an initial attempt to offer some direction as to how that task might be pursued.

Typical of the stories of these contactees are those of Willard M. Magoon<sup>2</sup> and Guy Ballard.<sup>3</sup> Magoon reported his experience many years after it had occurred to him as a young man in the early part of this century. He went to Mars, which he described as a beautiful,

lush planet of forests, parks and gardens. He had not planned the journey but had been taken there by some "unseen force." In his account, he says that the Martians were far ahead of earthlings in development, especially technologically. They already had automobiles and radios. They were also invisible and he could only sense their presence.

From his experience he gained a deep sense of responsibility for himself. "I could not depend upon someone else to do the work, it could not be done that way." He also admonished the religious leaders of his day not to fear scientific progress. It could not touch true religion.

Guy Ballard's adventures begin on the side of Mt. Shasta in Northern California. Here he encountered a mysterious being who began to teach him the mysteries of the ages. On New Year's Eve, the teacher told Ballard to prepare himself for a gathering at the Royal Teton Mountain. At seven in the evening, they left Ballard's house and journeyed inside the mountain to a vast cavern. Once assembled, Ballard and 105 others became host to twelve Venusians who appeared in their midst in a blaze of light. During the course of the visit, the Venusians played the harp and violin much to the delight of all. On a large mirror they showed scenes from their home planet of advanced scientific and technological achievements. They also revealed a future dissipation of the dark forces threatening the earth and the gradual coming of a time of peace and goodwill.

These accounts are typical, as noted above, but more interesting than most in that

Magoon's was published in the 1930s and Ballard's appeared in 1935. More than a decade before Kenneth Arnold gave us flying saucers and almost two decades before Adamski introduced us to Orthon, Magoon and Ballard were in contact with Martians and Venusians. And even more fascinating, these two are not just isolated anomalies, but fit into a tradition of claims of extraterrestrial contact that covers the two centuries before Arnold and Adamski. This 200 years of reports of contacts with outer space provide needed additional material to compare and contrast with modern contactee claims, CEIIs and abductions.

This paper surveys over 100 contactees from the 1750s to the present. Included are all known cases of claims of extraterrestrial contact prior to 1952, all contacts reported from 1952 to 1964, and all post-1964 contacts published in book form. The central characteristics of the contactee phenomenon will be highlighted and the contactees placed in their more appropriate context, that of occult religious tradition, to which these accounts show many similarities. In the concluding section, some reflection on contactees and current research on CEIIs and abduction cases will be offered.

#### The Beginning

In 1758 Emmanuel Swedenborg, the famous Swedish scientist and seer, published his cosmological treatise, Concerning Earths in the Solar World, Which Are Called Planets: and Concerning Earths in the Starry Heaven; and Concerning Their Inhabitants: and Likewise Concerning the Spirits and Angels There from Things Seen and Heard.<sup>4</sup> In this volume, the renowned scientist informed the world that he had personally traveled to the various planets of the solar system and even beyond to planets of the starry heavens. He described each in turn. For example, he recorded details of Martian anatomy and physiology. He reported on their unique social system where each individual found his way into a society of people of like mind and temperament: "Everyone there lives content with his goods, and everyone with his honor, in being esteemed just, and one that loves his neighbor."

Swedenborg represents a transition in the literature of the West. His book appeared in the midst of a century known for the popularity of the "fantastic voyage" novel.<sup>5</sup> In these

novels, which were turned out by dreamers all over Europe, the hero travels to some spot remote to his/her home setting. The spot may be outer space, the inner earth, a far land (like Gulliver) or a future time. Once in the new locale, the hero discovers an ideal society. The author writes his/her account as a parable or call to action for the readers. The books dealt primarily with issues of social justice, technological progress, public education and moral welfare.

Swedenborg's EARTHS IN OUR SOLAR SYSTEM became a first. It reads much like another fantastic voyage novel, with the exception that it claims to be an account of an actual trip to outer space. The trips to the planets were not seen by Swedenborg as merely figments of his imagination or projections of his hopes for the world. Swedenborg would soon be followed by others who claimed that they actually had traveled to outer space or to the inner earth or had met inhabitants of these places.

Possibly the most famous claim, nearly a century and a half after Swedenborg, was by a French medium, Helene Smith. In her account, she traveled to Mars in the 1890s, returned to describe the Martians, and drew pictures of the animal and plant life. She learned Martian which she spoke and wrote. Fortunately for us, she turned over all of the data concerning her intercourse with Mars to psychologist Theodore Flournoy, who analyzed it and published his results.<sup>6</sup>

Among other reflections, Flournoy discussed fully the Martian language. He discovered that Martian was, as he termed it, merely "an infantile travesty of French"; each Martian letter had French cognates. Smith had created a new language wholecloth, and one is immediately reminded of recent research on glossolalia:<sup>7</sup> people who speak in tongues create a new language which is an infantile, cut-down version of the language they speak normally.

The cases of Swedenborg and Smith raise the central issues of contactee claims, all of which revolve around the rather parasitical relation that occult religion has to both popular science and research into the paranormal. Naively, the contactees claim to report on reality in an objective and even scientific manner. They draw upon popular scientific assumptions and reflect upon the

current state of knowledge. Smith, like her American contemporary Sara Weiss,<sup>8</sup> reports in great detail on the Martian canals. Astronomer Percival Lowell had just published his first book detailing the "discovery" by the Italian G.V. Schiaparelli of the canals and the confirmation by the French astronomers in the 1880s. Interestingly, Swedenborg visits each planet known to exist in the 1750s on his way beyond the solar system to the starry heavens, but fails to note the existence of Uranus, Neptune or Pluto.

Thus the contactee material, like occult material in general, when looked at in historical perspective contains mistake after mistake as it attached itself to popular scientific theories and conclusions that would later prove to be incorrect. This ongoing relationship to scientific error serves to focus more clearly the true intent of the material--to offer moral, metaphysical and theological reflections on those areas of science and society considered most crucial to the contactee. Therefore, while Swedenborg could comment upon human anatomy and the social order, and Smith on the possible life-on-other-planets implications of the sighting of canals on Mars, more recent contactees commented upon the atom bomb and social disintegration in the urban setting.

Also, being tied to science as they are, contactees have continually shifted their model of scientific thought, again like the occult community in general. In the early 19th century, mesmerism gave a scientific cast to occult speculation, but was replaced before the century was over by the wedding of Spiritualism with Darwinism and Newtonian worldviews. Both are reflected quite strongly in the various Spiritualist creeds written in the late 1800s.

Most 19th and early 20th century contact with extraterrestrials occurred in a Spiritualist context, more likely than not in a seance. The prime mode of contact was a phenomenon quite familiar to psychic researchers, "astral travel." A person experiencing astral travel senses his/her body and consciousness separately, and while the body remains in one place, the consciousness travels around. Thus Swedenborg and mediums like Smith and Weiss could go into trance and travel to the various planets. A series of out-of-body experiences as astral travel is also known, was

described by Albert Bender who started the whole man-in-black myth.<sup>9</sup>

By means of their space contact, contactees could replace the authority of the religious tradition they had cast away. They invoked the momentary authority of science (considered as a body of knowledge) which they bolstered with the additional information of direct contact with a new and equally authoritative source of information. Each provided a launching pad for the "religious" speculation they really desired.

Summarizing the large number of pre-Adamski contacts yields some interesting patterns. First, outer-space contact, with the exception of Swedenborg's romp through the galaxy, is confined to the known solar system and almost totally to Mars, Venus and the moon.<sup>10</sup> Venus gradually replaced Mars during the 20th century as the favorite contact planet.

Second, contact is established by some psychic/occult means. The most helpful tool is astral travel. Through astral travel, they could do what flying saucers would later do. They could traverse long distances in relatively quick time without worry about such mundane items as g-forces, the vacuum of space and escape velocities. In no case did a contactee claim to use any kind of spaceship nor did any Martian or Venusian visitor travel by such a ship to reach Earth. Rather, following the lead of the fantastic voyage novels, contactees either traveled astrally, woke up from a sleep to find themselves mysteriously transported to their destination, or experienced some form of what might be termed dematerialization. (John Carter, Edgar Rice Burroughs's earthling on Mars, traveled by a mysterious dematerialization process.)

Third, once contact is made, communication is by telepathy. Contactees seem astute enough to know about language barriers and some know language syntax barriers to direct translation. Telepathy solves both problems in that concepts, not words, are communicated. Smith got exposed in her Martian communication because she did not fully understand the relationship between languages.

Fourth, contactee accounts emphasize the message which is usually metaphysical. The information concerning the planet serves merely to authenticate the lesson to be learned.

Weiss's contacts with Mars were meant to validate Spiritualism while more clearly defining points upon which Spiritualists had failed to reach consensus. Immo, her Martian contact, talks through Weiss to the larger Spiritualist community:

In planetary language, which all advanced spirits understand, Evon Thia (Martian words roughly translated as "for love's sake") is the watchword of all engaged in endeavor to uplift humanity on both the physical and spirit planes of being; and such spirits strive ever to unfold such mentalities as are sensitive to their approach; for only through sensitives can the truth of the continuity of existence be demonstrated.<sup>11</sup>

In so many words, the Martian is verifying a major Spiritualist doctrine of belief in the necessity of mediums. Such conclusions far outweigh any information about life on Mars that were also included in the contact.

Finally, a religious context was almost always assumed. Swedenborg went on to found the Church of the New Jerusalem, the first of the modern occult religions. Spiritualism, which was strongly based upon Swedenborg, at least in its earlier stages, was the home for most of the others--Smith, the Dentons, Weiss and Magoon. Austrian Franz Loeber began his own occult religion, as did John Newborough.<sup>12</sup>

Now is the appropriate time to introduce Madame Helena Petrovna Blavatsky into the contactee picture. Religious students will immediately recognize the name as one of the founders of the Theosophical Society, the single most influential occult body of the modern era. An ex-Spiritualist, HPB created a new occult system which included as an integral part a hierarchy of "ascended masters." These masters, functioning like a gnostic pantheon, formed a structure of "supernatural" beings between humanity and the Divine. In Blavatsky's system, humans dealt more with the masters who were close and relatively accessible, than directly with the remote and very abstract, impersonal deity.

Little recognized, and certainly not emphasized by either HPB or modern theosophists, Blavatsky included among the hierarchy masters

who dwelt on Venus and with whom she was in contact. These masters she termed the Lords of the Flame and the Lord of This World, the head of the hierarchy for humanity. Under these Venusian Lords are the Lords of the Seven Rays (or colors) who have direct contact with human adepts such as Blavatsky.<sup>13</sup> Theosophists have, as a whole, focused their attention upon the material that the masters delivered through their main teachers, HPB, Annie Besant, Charles Leadbeater and Alice Bailey.

However, Guy Ballard, upon making contact with these masters, including the Venusian Lords of the Flame, built his own version of occult religion by emphasizing the direct and frequent ongoing contact with the masters. Members of his Great I AM religion gathered to hear the latest word from the masters, instead of gathering to study what Madame Blavatsky had written years ago in a book claimed to be inspired by the masters. Not only did Ballard become the first to actually build a religion on contact with extraterrestrials (as opposed to merely incorporating the extraterrestrial data into another already existing religion), but his emphasis was placed upon frequent contact with the masters from whom he received regular messages to the followers of the world contactee movement. The movement took over the I AM hierarchy and changed it into a space command hierarchy.

#### Pre-Adamski and the 1950s Contactees

Having surveyed the contactees of the pre-Adamski era, one naturally wonders how these contactees compare with the Adamski era contactees. The characteristics of the 1950s contactees have been summarized in a previous paper by this author,<sup>14</sup> and the comparison is remarkable.

First, in the 1950s, contact remains with the three primary planets--Mars, Venus and the moon, but expands to include regular contact with Saturn, Jupiter and Clarion, that mysterious twin of Earth on the other side of the sun.

Second, the flying saucer remains the only new element in the contactee story. It tends to replace astral travel as the means of getting around, both by extraterrestrials and by earthlings tripping into outer space for the first time. The saucer is not essential, however, and in many accounts in which it appears,

it is obviously an additional frill. In many contactee accounts during the fifties, no flying saucer is included at all. Venusians walk the streets of urban America ready to talk to anyone aware enough to recognize them. Others are never seen but communicate directly with the earth contact via telepathy. A few simply materialize in the person's presence when they wish to make themselves known. Astral travel is by no means forgotten and remains central to the accounts of such famous contactees as Angelucci and Michaels.

In Thomas Blot's [89] account of his contact with a Martian,<sup>15</sup> the Martian suddenly appears at his rural home and begins to talk in clear English about Mars. Blot's account is unique in that most pre-Adamski contactees communicated in telepathy. Most post-Adamski contactees also communicate by telepathy, but a high percentage of the extraterrestrials, like Blot's Martian, speak English. Where such direct communication occurs, however, other paranormal events occurred to set the encounter apart from the mundane. Levitation, automatic writing, the ability to see through solid objects, and dematerialization were typical.

Thus, while the fifties contactees solved the language problem both by telepathy and the super-intelligence of the extraterrestrials, they kept a "mysterious," a paranormal aspect to the contact prominent. Those reading the accounts could thus be alerted that they are receiving much more than the straight account of a witness to a more or less unusual event.

Third, the contactees of the fifties continued to place much more emphasis upon the moral, metaphysical and spiritual messages they received, than on straight information of a "scientific" nature about outer space, space travel or other mundane matters. Given the history of the pre-Adamski contactee accounts, we are no longer surprised, for we now understand that the contactee sees his/her task as delivering a message that has come out of either reflection upon or an intuitive grasp of the implications of modern science and culture. Thus, the contactees are naturally concerned with the effects of atomic power, war, pollution, and the need for the human family to come together.

Fourth, having noted the other likenesses between the pre-Adamski contactees and their

fifties counterparts, we are not surprised to also find them operating in a religious context. More than half founded their own occult religion or became prominent in one founded by another. Almost all became involved in the two contactee esoteric structures founded by George Van Tassel and Gabriel Green. Many had come out of Spiritualist church or occult groups, such as Norman, Brady and Lee. No less than five different groups grew out of Adamski devotees.

#### From 1960 to the Present

By 1960 occultists drawing on the massive body of occult teachings had created a new religious movement. With material from Spiritualism, Theosophy and the Great I AM, they found in the flying saucer a new image and a new concept around which to build their peculiar variations of occult belief. They followed a pattern set in the 200 years between Swedenborg and Kenneth Arnold. They found in Adamski and other early contactees their prophets (and it matters little whether the prophets really believed their messages), and in Van Tassel and Green their organizers, their bishops and overseers.

The crucial organizational development of the flying saucer movement in the 1950s made the future development over the next decades somewhat predictable. The movement followed the pattern of many new religions. They became institutionalized, with strong organizations developing around some contactees and many weak ones dying when the leader died or lost interest. Two organizations, Unarius, headed by Ruth Norman,<sup>16</sup> and Mark-Age,<sup>17</sup> led by a group of four in Miami, Florida, became the largest contactee bodies with groups across the United States. They were followed by Understanding, Inc. (Dan Fry) and the various Adamski groups, now thoroughly splintered.

As with other psycho-occult groups, new people with experiences of a kind promoted by the groups continued to appear. Some, such as Uri Geller,<sup>18</sup> became quite famous and had groups form around their revelations. Beti King<sup>19</sup> moved from classic Spiritualism, where she had been a medium. Warren Goetz<sup>20</sup> and Elna E. Kenney<sup>21</sup> (both Adamski followers), and Greta Woodrew<sup>22</sup> represent a second set of leaders who emerged as contactees from within existing contactee organizations.

The contactees of the 1960s and 1970s follow the pattern set in the 1960s with one major exception. They have had to respond to increasing knowledge brought to the public consciousness that very little chance for intelligent life in this solar system exists. Therefore, they have had to abandon talk of contact with not just Mars and Venus, but Jupiter, Saturn and the outer planets as well. All of the new contactees to emerge in the last decade either fail to reveal the planet from which their extraterrestrials come, or place it in the remote edge of the universe, far from the prying eyes of the space programs. Thus Woodrow Derenberger<sup>23</sup> entertains visitors from Lanulos, and Oscar Magocsi<sup>24</sup> visits Argonia of the Omn-Onn Solar System, a member of the Psychean Federation Worlds. But most extraterrestrials keep their origins vague, as an exchange initiated by French contactee Claude Vorilhon shows:

"Where do you come from?" he asked.

"From far away. . . ."

"Do you speak French?"

"We speak all of the languages of your world."

"Do you come from another planet?"

"Yes. From a distant planet about which I will tell you nothing for fear that if the men of the earth weren't wise enough they could come to trouble our peace."<sup>25</sup>

The flying saucer movement has taken its place as a significant segment of the occult/psychic community in the United States. Interestingly enough, it suffered little by the Condon Report which killed and weakened so many UFO groups, a further indication of its essentially religious nature. It appears at present to be stable and growing only slowly, if at all. For the time being, it has insulated itself against the dangers of information produced by the space program, but the continuing spread of information on conditions in space may still have a strong effect on the movement in ways not yet apparent.

### Conclusions and Summary

This survey of the contactee movement has verified a conclusion reached earlier that the flying saucer movement is in effect a new branch of occult religion. It follows the patterns of occult religious bodies and draws most of its content from general occult teachings.

As such, the contactees, both the more famous ones of the 1960s and the more recent ones, should be approached as participants in an occult religious movement. They are not kooks, but they are people who have been swept into a movement because of a direct experience with some extraordinary occurrences. These occurrences resemble most closely common visionary and psychic experiences cast in a framework of space age technology.

The contactees, also, hold little promise of supplying any useful information on the nature of the physical universe or outer space. They seek as a group religious, not scientific, goals though they live in an age that demands some lip service to science and some technological sophistication, even in religious matters. In their naivete, they do not see the lines between their religious quest and the search for information about unidentified flying objects. When they mix with UFO investigators, all of the tensions of putting religious people and secular scientists together are compounded by the anxiety of ufologists over the legitimacy of their pursuit and the desire of the contactees to share their experiences.

In one sense, the contactee phenomenon is quite separate from the attempt to understand unidentified flying objects. It has, nevertheless, particular interest in the recent focus of attention upon close encounters of the third kind and abductions. Prior to the mid-1960s, all of the CEIIs which received any attention from the public were the contactee cases. They form the only base of case material with which to compare more recent cases.

The need to use contactee cases as a base of investigation became obvious in at least one prominent ufologist's treatment of contactees as "messengers of deception." In Vallée's case,<sup>26</sup> the naivete concerning occult and religious phenomenon in general destroyed the

work of one ufologist willing to take the reports of close encounters seriously. But Vallee's theme repeats itself in less extreme ways in other literature, such as that treating the Andreasson affair.<sup>27</sup>

As ufologists, we are weak methodologically when we rely too heavily upon case studies, as opposed to comparative studies of many similar cases. We also approach CEIII cases with a basic ignorance of common psychological and parapsychological material. We do not recognize astral travel. We do not understand psychokinesis. We grossly underestimate the power of the human mind, especially when put into a disassociated state of consciousness such as hypnosis, to produce the most remarkable material, material completely impossible for the normal waking consciousness to acquire.

If there is any factual content to the stories of abductions and close encounters,

especially those cases investigated through hypnosis, that content must first be tested in the light of equally strong content from competing accounts of close encounters with unusual beings by mediums, shamans and visionaries. These people have for years been abducted by both fairies and flying creatures and encountered demons, ghosts and angels.

Finally, in gathering case studies of close encounters, the case material is incomplete without vital data on the total life of the contactee and follow-up studies on the result of that contact upon the life of the individual(s) involved.

Only by becoming more sophisticated in our approach to contactee-like cases will we be able to lift the study beyond the esoteric interests of a few UFO buffs and make a genuine contribution to the body of scientific knowledge.

#### DISCUSSION

?? What percentage of the contactees have actual sightings?

M. A very small percentage--less than half, and in some cases it's as if someone developed a story and then added a saucer to it as a kind of last-minute thought. It's not integral to the story itself.

?? Isn't it true that man's reach exceeds his grasp and that during the course of human history, man's philosophical reach is what leads him to the stars?

M. I'm not sure how the reach and grasp model applies here. Technological change is a product of an earlier philosophical change when we made the transition to considering the world something worthy of studying rather than suffering with. But as technological change became so overwhelming, philosophically, we had to react to it, and we reflected upon what was happening to us because of technological change. I think what we finally find in the contactee movement is one way a number of people have reflected upon what is the meaning of all the changes going on around us, and they have used the saucer in the earlier fantastic voyage idea as a means of doing that.

?? But do UFO investigators really report all the queer and unsettling aspects of UFO sighting accounts?

M. I know that that is a problem with UFO investigators; that they conceal data that doesn't conform to their understanding of what's supposed to happen. They think they've got a good case, and they will report what they consider to be relevant data, but will fail to report disconfirming data that's also part of the case. That's a problem, but how much of a problem, probably we'll never know.

- ?? Charles Fort invented the ET hypothesis for UFOs in 1919 with The Book of the Damned. He pushed the UFO hypothesis, and yet it fell, as far as I know, absolutely stillborn. Nobody took it up, there was no cause, no interest. His idea, which is tremendously magnetic to us today, just fizzled. Why? I mean, if these other people, the contactees and the psychic types used it, why did it fizzle when Fort started pushing it for UFOs?
- M. That's a question we should turn to a cultural historian rather than a religious historian to answer. I could only speculate wildly that possibly the whole idea of an extraterrestrial hypothesis needed a mechanism to communicate back and forth, which waited until the spaceship hypothesis. Most of the early novels about contacts with other worlds had to do something weird to get the contact going. It's only in the early part of this century that you get the science fiction people beginning to speculate about spaceships. The most popular science fiction novels in the early twentieth century were those of Edgar Rice Burroughs. There's no spaceship, but he's sending people to Mars and Venus. Then the V-2 rocket alerts us, on a popular culture level, to the possibility of a mechanism that could get us there and could get someone else here.
- ?? You have talked about the contactee in terms of the social environment, which is the environment of occultism. I wonder how you would deal with the story that takes place outside the occultist social environment--a classical contactee story such as Samuel Eaton Thompson's encounter on March 28, 1950 with Venusians which is strikingly parallel to later stories we have heard from Adamski and others?
- M. For those of you who don't know about it, between Arnold and Adamski there is one contactee by the name of Samuel Thompson who lives in the little town of Centralia, Washington, and claims that he has met up with an extraterrestrial who comes to him in a saucer. But the only information I've been able to uncover about it is the newspaper item from the Centralia paper. If there is other information I'd like to know about it. When you start evaluating contactees, you really have to say "What happens to them five years down the road?" That is a crucial item. This account from the Centralia paper is a classical contactee account--there's no doubt about it.
- ?? But we do know what happened to Thompson. He faded into oblivion.
- M. That happens to some contactees. It's sort of like the person who gets converted at a revival meeting. A small percentage of them go on to become strong church members, and some of them go back to their own ways after a few weeks.
- ?? I think you have presented us with a methodological problem, because it would be easy for us to study the universe and discover that there are many crazy people and that we are not virtually alone. I believe that that could account for all of the CE III stories, but I hope I would not be held amiss if I failed to study all the crazy people in Berkeley because you think that it is relevant. I think that we've been listening to some things that are important but relatively irrelevant to the particular study we wish to undertake. And I would challenge you to make relevant your story of contactees, of religious and occult groups, to this particular thing. The fact that there are crazy people, or perhaps deluded people in the world does not mean that these particular people we are dealing with are hallucinatory.
- M. I wanted to emphasize, and I thought I said it twice, that these are not crazy people. These are people who are going through a quite normal process which many of us do go through, only we use other categories to do it. They happen

to have gone through this process of, we can call it integration, personality integration or whatever. They are not crazy. They just have a way of expressing the transition in their lives that they are going through in some ways that are culturally in the minority. The reason that I would say this is quite relevant to the study of abductions and CE IIIs is that oftentimes the mysterious elements that we supposedly sometimes encounter in CE III situations are due to the fact that we don't know about the history of these people, the history of kinds of things that they have gone through for years; that we don't know the kinds of things that happened when people encountered angels; that we don't know the kinds of things that happened when people encountered fairies; and that what might be happening in CE III cases is directly parallel to what people have reported for ages as having happened to them. There's nothing mysterious about it at all, there's nothing new about it at all, it's just the same old stuff that people have reported when they've gone through the experience of personal integration, transition, initiation, whatever you want to call it. That's why I say it would be relevant.

?? How do you feel about biblical references to UFO encounters?

- M. I suspect that Ezekiel's Wheel and the others should be seen as traditional visionary experiences rather than as hardware encounters from the past. That's my own idea. I don't really buy Downing's hypothesis. I see them as visionary experiences, and much related to the contactee phenomena of the day. For example, you can study what happened at Fatima and Garabandal, which are sightings of the Blessed Virgin; many pious Roman Catholics base a lot of their piety on them. These come off as, on the one hand, classical visionary experiences, or on the other hand, as CE III encounters with all kinds of weird phenomena going on around them. They would come off as CE IIs, CE IIIs-- mixed types of encounters.

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# EVIDENCE FOR UFOs IN THE ITALIAN PAST

ROBERTO PINOTTI

Today, when mass media start talking about UFOlogy, they usually connect it to the so-called "Ancient Astronaut" theory. As far as I am concerned, in my books and articles I have always warned the public against any indiscriminate connection between this stimulating theory, which is built on some interesting facts, but also on many discrepancies, and the systematic study of historical documents describing apparent UFOs in the past.

As ufologists, we may be interested in this theory. But it is necessary to emphasize that UFO research as such must try to focus, above all, on the nature of UFO sightings and evidence today as well as in the past and not on speculations, legends and archaeological anomalies in the light of an a priori interpretation of history--the idea that extra-terrestrial beings must have visited our planet several times in the past. Of course, this is far from being impossible; nevertheless, the Ancient Astronaut theory, from a scientific point of view, still suffers from a lack of supporting evidence, since no definitive proof of extra-terrestrial intervention is available at present. But, on the contrary, we do have some historical evidence of UFO-like descriptions, also in the past. It is just a question of finding them and trying to interpret them, after having compared them with today's UFO evidence. In Italy our classical heritage makes this neo-humanistic approach possible.

We know that even in Roman times unusual aerial phenomena were reported. The best

anthology of such sightings is Prodigiorum Liber (The Book of Prodigies) by the Roman historian Julius Obsequens, who extracted them from the original works of Cicero, Titus Livius, Seneca and many other well-known Latin authors. Most of these "prodigies" may be explained today with natural or atmospheric phenomena, of course. But some of them still baffle any conventional explanation. Let us mention just two examples from the 1552 edition in our possession:

When C. Marius and L. Valerius were consuls, in Tarquinia, a thing like a flaming torch was seen in different places falling suddenly from the sky. Towards sunset, a circular flying object, similar in its shape to a burning "clypeus" [the round shield used by Roman legionaries], was seen crossing the sky from west to east.

This description of an unknown aerial phenomenon, which occurred in 98 B.C., is too limited to permit us to interpret this event. But what is strange here is the use of the term "clypeus," the round, light Roman war shield with a typical, semi-spherical reinforcement structure at its center: in other words, an ideal representation of a domed "daylight disc" of today. Is this just a coincidence?

In the territory of Spoletum [Umbria], a globe of fire, golden in color, fell to the earth, and ascended into the sky,

where it obscured the disc of the sun with its brilliance. It turned towards the eastern quadrant of the sky.

This event occurred in 89 B.C., and its description cannot be easily explained in terms of known natural phenomena. On the contrary, a UFO landing and takeoff of today would be reported with similar words.

A Roman scientist, Pliny the Elder, tried to classify aerial phenomena. In his Naturalis Historia (Natural History) he mentions "Flying 'facies'" (torches), "lampadae" (lamps), and "bolides" (fireballs), as well as "trabes igniteae" (beams of fire). Pliny stated that these flying "beams of fire" used to appear and shine suddenly in the sky (Book 2, XXVI).

In Obsequens' Prodigiorum Liber we find several cases of such "beams of fire." Should we include them in Pliny's classification as natural or astronomical phenomena? This is a very difficult question to answer, as Dr. Marta Luchina Chionetti remarks in her graduation thesis (University of Turin) about Conradus Lycosthenes (whose real name was Karl Wolffhart), the 16th century German humanist who edited Prodigiorum Liber, integrating the lacunas in the original text with quotations from the original Latin sources as well as with descriptions of similar phenomena that occurred in the Middle Ages and even in his own time.

As a matter of fact, no natural explanation seems to account for events of this kind. For instance, Lycosthenes mentions events like the following one (page 527): "In 1520 A.D. in England, at Hereford, a colossal beam of fire was seen in the sky. Approaching the earth, it burned many things with its heat. After this, it ascended into the sky again and was seen to change its



FLYING "FIERY BEAM" FROM THE RENAISSANCE EDITION OF PRODIGIORUM LIBER

shape into a circle of fire." This description has surely nothing to do with any known natural phenomenon. On the contrary, it sounds like the perfect replica of a UFO near-landing in a typical close encounter of the second kind characterized by thermal effects.

Other historical documents mention similar "beams of fire" in the 16th century. In Benvenuto Cellini's autobiography we may read: "we mounted on horse, and we went quickly towards Rome. At nightfall we had reached the top of a hill, and casting a glance behind our backs we both cried out at the same time: 'My God! What is that huge thing over Florence?' It was just like a gigantic beam of fire, sparkling and shining. . . ." (from Benvenuto Cellini's La Vita, Book 1, Chapter 89). Unfortunately, Cellini does not give us other details.

On October 7, 1571, 410 years ago, a famous historical event determined the destiny of western civilization. Everybody is aware of the decisive naval battle between Christianity and Islam in the waters of Lepanto, in which ships of the Christian League destroyed the Turkish fleet; however, only a few know of an interesting detail, which we may read in the works of father Alberto Guglielmotti, the official historian of the Roman Pope's Navy.

In his words, "the night before the 21st of September a sign was seen in the sky, and everybody considered it a miracle. The night was quite calm and fair, with a fresh north wind and all the stars clearly visible and bright. Then suddenly," Father Guglielmotti wrote, according to the eyewitness accounts reported by Sereno and Caracciolo, "a huge, flaming shining pillar of fire was seen . . . crossing the night air for a long time, filling all the witnesses with great wonder."

Father Guglielmotti continues:

Today we know we must consider not only wills-o'-the-wisp and St. Elmo's fires, but also fire-balls and beams of fire like this one as electric and pneumatic phenomena of the atmosphere typical and frequent during summer time; nevertheless, all the witnesses considered this of good omen, foreshadowing a great victory. They thought that the pillar of fire was showing them the way, guiding the Chris-

tian fleet in the sea as in biblical times it guided the people of Israel in the desert. . . .

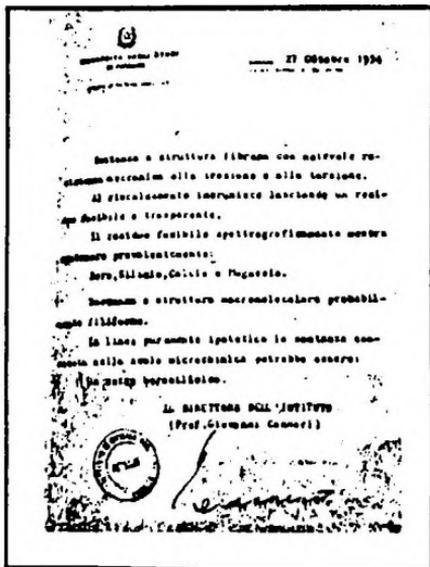
Curiously, Guglielmotti connects this event to the "pillar of fire" of Exodus, anticipating certain ideas of the supporters of the Ancient Astronaut theory. In any case, we are facing only more or less detailed general descriptions of such UFO-like phenomena in the past, and this is not enough. From a scientific point of view, we need more and more convincing evidence.

As we may see by observing the quantitative trend of UFO reports in Italy, our country experienced four big UFO "waves" after the end of the Second world War, in a real crescendo. The peak years were 1950, 1954, 1973 and 1976. In 1977, our UFO study organization, Centro Ufologico Nazionale (CUN), published the results of the first computerized analysis of an Italian "wave," making use of a catalogue of 356 UFO events in 1954. The 1954 Italian wave was parallel to the well-known French one of that year, but its importance was ignored for years abroad, and even now international ufology is not aware of that interesting body of sightings just for language reasons--in other words, because of mere translation problems.

On October 27, 1954, in broad daylight, two flying luminous cigar-shaped objects that were followed by a sort of white and cloudy wake were observed by many inhabitants of Prato (a suburb of Florence) in Tuscany, and in particular by the two landlords of the San Marco Hotel, Cennaro Lucchetti and Pietro Lastrucci. Swiftly, after a 45 degree turn in the sky, the two UFOs headed toward Florence silently, in a coupled flight formation.

Just a few minutes later, in Florence, a football match was interrupted because of UFOs. The football teams of both Florence and Pistoia and the referee on the playing field as well as the public, saw the two saucer-like objects hovering over the stadium. In other parts of town, hundreds of people saw "flying saucers" crossing the sky in pairs. At the same time, as all newspaper accounts reported and emphasized, a strange and woolly white substance, soft and frayed, fell down from the sky while the mysterious objects were maneuvering high. As a 10-year-old pupil at that time, I still remember the roofs of Florence whitened by it.

An engineering student at the University of Florence, Alfredo Jacopozzi, put some pieces of this substance inside a glass container, sealed it, and carried it to the Institute of Analytic Chemistry of the University of Florence. While on the outside, the substance was beginning to volatilize, Jacopozzi asked the Director of the Institute, Prof. Giovanni Canneri, to analyze it. This was the official result of the microscopic and spectrographic analyses made by Prof. Canneri and his assistant, Prof. Danilo Cozzi:



Translated:

It is a substance with a fibrous structure, characterized by a remarkable mechanical resistance to both traction and torsion. Heat makes it brown, originating a fusible and transparent residue. This fusible residue proved to be, from a spectrographic point of view, a combination of boron, silicon, calcium and magnesium. By mere supposition, in the microchemical scale this substance might be a boron-silicon glass. But the absence of any oxygen molecule in its chemical composition does not support this hypothesis.

This official analysis of a mysterious substance falling from the sky in different areas of Tuscany as UFOs were maneuvering is still unknown abroad, in spite of the fact that it is mentioned by Italian ufologists in their books. Today, after CUN's quantitative computerized analysis, a deeper research shows that during the 1954 Italian UFO wave, we had at least 29 reported events involving the falling of this substance, known in English-speaking countries as "angel's hair" and in France as "fils de la vierge." And 24 of them are associated with the presence of UFOs in the sky above. In the light of this connection, perhaps what we may read about this problem in NICAP's The UFO Evidence, as well as in Allan Hendry's The UFO Handbook, and in Ronald Story's The Encyclopedia of UFOs is far from the last word about this seemingly UFO-related phenomenon. Here we have the catalogue of the "angel's hair" falls during the 1954 Italian UFO wave:

(Let me thank Prof. Solas Boncompagni, Mr. Pier Luigi Sani and all the other authors of UFO in Italia: L'Ondata del 1954 (UFOs in Italy: The 1954 "Wave", the Italian ufologists who pursued further CUN's original computerized analysis in their detailed report from which these verified data were extracted.)

The UFO Evidence lists 43 examples of "angel's hair and/or gossamer falls," with only two Italian cases (both of 1954). Two other well-known events of this kind from Italy not involving the presence of UFOs occurred in the same zone of the Adriatic coast at Porto Garibaldi on November 6, 1960, and at Lomacchio on October 18, 1966. In this case, the natural origin of the samples involved was suggested by the results of their analysis at the University of Bologna, quite different from Prof. Conneri's and the Gela Hospital lab's conclusions.

This means that at least 27 important angel's hair cases were ignored by NICAP and in the United States. No wonder there is a generally negative attitude by today's American ufologists facing this problem in UFO research. Let me emphasize again that 24 of the 1954 Italian UFO wave cases were associated with UFO sightings, while only 23 in the 43 listed in The UFO Evidence were characterized by concomitant UFO phenomena.

This means, in my opinion, that a new approach in the study of such cases seems to be necessary in the USA. Surely spider webs are not the only explanation for the so-called angel's hair phenomenon.

On the contrary, facing the problem from a statistical point of view, a comparison of such phenomena from the French and Italian cases seems to indicate that events of this kind are associated with the presence of Saturn-shaped Daylight Discs maneuvering on high along with the presence of at least one big cylindrical UFO.

I think we must remember the classic Oloron sighting of October 17, 1952, which occurred in the southwest of France. At 12:50 p.m., a white flying cylinder emitting a sort of white smoke, followed by a group of other objects shaped like reddish spheres with yellow rings all around, were seen by many citizens. At the same time, we had a classic "angel's hair" fall. A science professor in the local high school, Dr. Poulet, did not succeed in analyzing the fallen substance before it vaporized, but confirmed those fibers burned like cellophane when ignited. The Saturn-shaped objects hovered over the area in pairs with zigzag movements. After 10 days, on October 27, all this appeared over Gaillac (Tarn) followed by another "angel's hair" fall. [C, AND FIGURE 2]

French authorities were very interested in these cases since they could suggest the presence of gigantic carrier-like aircraft flying and maneuvering on high and launching several disc-shaped "flying saucers" in the atmosphere for reconnaissance missions and grouped flights in formation. Exactly two years later, in Italy, the same thing occurred. Once again we had "flying cigars" or cylindrical objects, as well as smaller Saturn-shaped UFOs in formation. Alleged UFO photographs [D] in the Italian press in 1954 seem to confirm all the eyewitness accounts of this kind, as well as a 1966 photographic case.

By mere chance, in 1969 CUN knew that a Bologna bank official had photographed a strange aerial phenomenon in September 1966. He did not like to be intruded upon, but at last he admitted he photographed two luminous objects after sunset along the coast of Gargano, an Adriatic peninsula in southern

## CATALOGUE OF "ANGEL'S HAIR" FALLS DURING 1954 IN ITALY

DATE	NO.	PLACE	TIME	CONCOMITANT PHENOMENA
Oct. 27, 1954	1	Sesto Fiorentino	1:30 pm	1 OO splits into 3 UFOs
Oct. 27, 1954	2	Giolica Alta (Prato)	2-2:20 pm	1 OO near-landing
Oct. 27, 1954	3	Florence & suburbs	2:20-3:30 pm	Several OO in pairs (football match interrupted; samples analyzed in university lab defined "combination of boron, silicon, calcium and magnesium")
Oct. 27, 1954	4	Siena	2:30 pm	Several OO (grouped)
Oct. 27, 1954	5	Lucca	3:30 pm	None
Oct. 28, 1954	6	Chiusi	daytime	3 OO (grouped)
Oct. 28, 1954	7	Siena	daytime	15 OO in formation
Oct. 28, 1954	8	Consuma (Arezzo)	morning	Skyquake
Oct. 28, 1954	9	Rome	4:00 pm	3 OO (grouped)
Oct. 29, 1954	10	Macciano (Siena)	morning	1 OO
Oct. 29, 1954	11	Citta della Pieve (Perugia)	0.30 pm	2 OO
Oct. 29, 1954	12	Calenzano (Prato)	1:00 pm	Several OO
Oct. 29, 1954	13	S. Mauro a Signa (Florence)	1:00 pm	Several OO
Oct. 29, 1954	14	Scarperia (Florence)	1-2:30 pm	Several OO ("very high")
Oct. 29, 1954	15	S. Pietro Agliana, Montale Agliana, S. Marcello Pistoiese, Lizzano (Pistoia)	afternoon	Several OO ("very high")
Oct. 29, 1954	16	Florence	2:00 pm	None
Oct. 29, 1954	17	Settignano, Campi Bisenzio, Rifredi, Prato (Florence), "villages in the Pistoia area"	2:00 pm	None
Oct. 30, 1954	18	Cetona (Siena)	daytime	None
Oct. 30, 1954	19	Perugia	11:30 am	1 OO (purple-blue sphere)
Oct. 31, 1954	20	Pietrasanta (Lucca)	7:00 pm	1 OO
Nov. 6, 1954	21	Rome	11:00 am	40 OO (2 V-shaped formations of 20 OO in single X-shaped formation, "very high")
Nov. 6, 1954	22	Civitavecchia (Rome)	11:30 am	1 OO
Nov. 10, 1954	23	Perugia	7:30 am	2 OO
Nov. 11, 1954	24	Lucca	3:00 pm	2 OO
Nov. 12, 1954	25	Rome	1:30 pm	2 OO
Nov. 13, 1954	26	Grosseto	afternoon	2 OO
Nov. 14, 1954	27	Gela (Sicily)	10:45 am	20 OO (samples analyzed in hospital lab defined: "glass-like fibers")
Nov. 14, 1954	28	Casaloldo (Mantua)	afternoon	1 OO splitting into 2 UFOs (local football match interrupted)
Dec. 4, 1954	29	S. Giuliano (Arezzo)	1:00 pm	1 OO

# LES SOUCOUPES VOLANTES VUES A OLORON LE 17 OCTOBRE

## sont prises au sérieux par les services officiels

Plusieurs habitants de la ville d'Oloron-Sainte-Marie (Basses-Pyrénées) ont déclaré, vendredi, à 13 heures, au plus sportif journalisme, qu'ils avaient aperçu, jusqu'ici, pour la première fois, les apparitions mystérieuses qui leur ont été signalées, une fois de plus, à Oloron, le 17 octobre, par les habitants de la ville. Les autorités officielles ont émis un avis favorable, comme un signe de l'existence de ces êtres, le 17 octobre, par le biais de l'Agence de presse officielle.

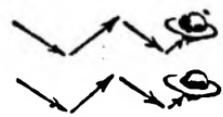
**L**es Oloronnais qui ont vu l'étrange phénomène ont vu un objet d'une forme ovale, à 13 heures, au plus sportif journalisme, qu'ils avaient aperçu, jusqu'ici, pour la première fois, les apparitions mystérieuses qui leur ont été signalées, une fois de plus, à Oloron, le 17 octobre, par les habitants de la ville. Les autorités officielles ont émis un avis favorable, comme un signe de l'existence de ces êtres, le 17 octobre, par le biais de l'Agence de presse officielle.

Il était 12 h. 50 environ. Le pilote était accompagné de la cloche d'un avion, vers lequel, le pilote s'approchait, se mettant à terre, dans une apparence, au premier étage de l'école. Des fenêtres, on découvrit un large panorama vers le nord de la ville. Les deux êtres à la fois et se rapprochèrent pour la première fois quand il y eut un Oloronnais, vers eux, s'en aller, à l'heure, et quelques minutes de ces apparitions furent aussi les soucoupes.

Deux se virent, un avion, long et fin, semblable à un objet de forme ovale à 15° qui se rapprocha de lui, se déplaçant lentement au large de la ville, à 2.000 mètres au-dessus de la ville.



Cette soucoupe est une copie de l'objet d'après lequel on a vu l'objet.



Les soucoupes se rapprochent l'une de l'autre et s'arrêtent au signal.



Les soucoupes s'arrêtent l'une de l'autre, une soucoupe se rapproche de l'autre.



Elles ont la forme d'une sphère de couleur rouge, couleur d'un objet.

Objet avait une couleur blanche, mais pas le même ton. Son dessin était très net. De son extrémité supérieure s'élevait un manche blanc.

M. Figeat, qui a vu dans la nuit, par les jumelles. Il n'y avait rien de particulier sur les flancs de l'objet.

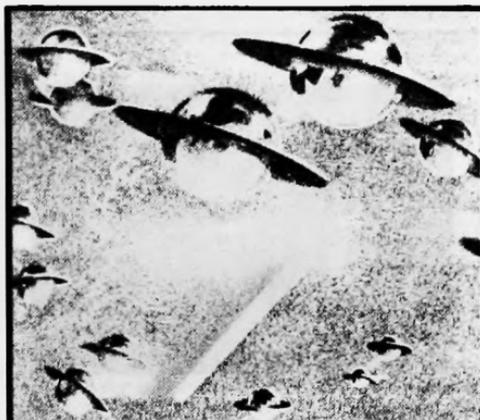
Mais bientôt apparurent, avec lui, de l'autre côté, et derrière, dans un triangle, une soucoupe avec d'autres angles apparents ce que l'on a décrit ailleurs comme des soucoupes volantes. Ces soucoupes avaient l'air d'une soucoupe normale, comme un disque de métal. A la première apparition, une soucoupe normale se rapprocha de l'autre, se mettant à terre, dans une apparence, au premier étage de l'école. Des fenêtres, on découvrit un large panorama vers le nord de la ville. Les deux êtres à la fois et se rapprochèrent pour la première fois quand il y eut un Oloronnais, vers eux, s'en aller, à l'heure, et quelques minutes de ces apparitions furent aussi les soucoupes.

Les soucoupes d'Oloron furent une étrange apparition qui fut perçue, comme des flammes d'acier, qui tombaient lentement au sol, en se désintégrant. Les formes qui vous êtes dites, ont pu se reconnaître. Ce fut, qui se rapprocha de la ville, au-dessus de la ville, devenant rapidement géométrique, par l'angle et disparaissant complètement. Il n'y avait pas de bruit, pendant quelques heures, après les télégrammes et les photographies.

Le même jour, on découvrit une soucoupe volante qui a vu dans la nuit, par les jumelles. Il n'y avait rien de particulier sur les flancs de l'objet.

Les soucoupes ont été vues à Oloron, le 17 octobre, par les habitants de la ville.

FIGURE 2. FROM "FRANCE DIMANCHE" NO. 322 (OCT. 26, 1952)



C. THE FLYING DISCS AND CIGAR SEEN OVER OLORON AND GAILLAC, FRANCE IN 1952

Italy. He was not interested in what he had photographed, but did want to protect his privacy, so we promised not to reveal his name in order to obtain this color slide. It was examined and analyzed by a professional photographer, in whose opinion no forgery seems technically possible. Besides, a hoax seems psychologically illogical in a person quite unwilling to be mentioned.

In any case, a professional enlargement of what Mr. Gerardo Bagnolo photographed (today, after his death, we of CUN can mention his name) reveals an unexpected chromatic difference between the two luminous objects, just a point and a segment of whitish light in the original color slide. [E] They proved to be a cylindrical blue-green-greyish structure and a circular body with a reddish-orange nucleus and a yellow ring all around. And this is just the way one of the Oloron case witnesses, Yves Prigent, described the Saturn-shaped UFOs he saw through his binoculars. A very remarkable coincidence, indeed!

This perfect replica of the 1952 French "soucoupes volantes" and of the 1954 Italian "dischi volanti" could be compared also with the well-known photographs of a Daylight Disc over Trindade Island, snapped from the

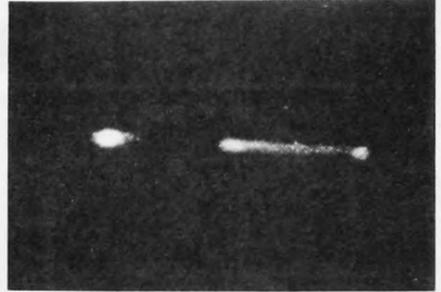


D. A "FLYING SAUCER" PHOTOGRAPHED OVER SIENA ON OCTOBER 28th, 1954.

Brazilian Navy's ship "Almirante Saldanha" on January 16, 1958, and later authenticated by Brazilian authorities. But neither the Trindade DD nor the Gargano UFOs could be associated with "angel's hair" falls.



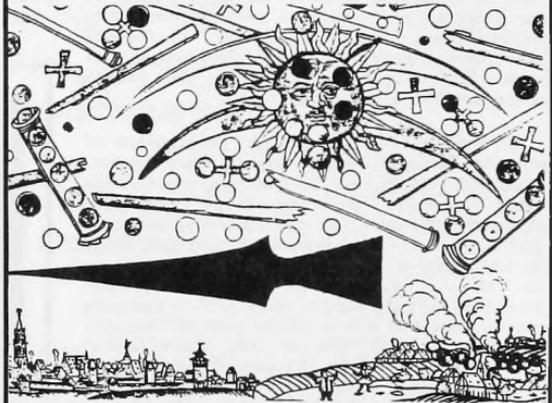
THE TRINDADE ISLAND DAYLIGHT DISC (JANUARY 16TH, 1958)



E. PHOTO OF AERIAL PHENOMENON AND ENLARGEMENT TAKEN IN SEPTEMBER, 1966 OVER THE GARGANO PENINSULA IN SOUTHERN ITALY.



G. DAYLIGHT DISC PHOTOGRAPHED OVER NAMUR, BELGIUM ON JUNE 5, 1955



AERIAL PHENOMENA SEEN IN NUREMBURG ON APRIL 14, 1945 mentioned by C. G. JUNG IN HIS BOOK FLYING SAUCERS (Collection Wickiana, Zurich Central Library)

As far as we know, one of the latest mass sightings involving the same objects seen in 1952 and 1954 in France and Italy occurred over the town of Talissay (Philippine Islands) on April 19, 1979. People saw "a 'mother ship' emitting several smaller discs in a V-shaped formation." Their reported landings in the Carapale Valley caused an official military inquiry.

In history, a visual representation of a recorded event must be considered partial evidence of it, from a scientific point of view. For example, we could say that the world-famous Bayeux Tapestry is a typical visual side-evidence of the Battle of Hastings. And in ufology, of course, visual evidence is very important. As we have seen, there are many recorded descriptions of UFO-like aerial phenomena of the past in the works of several historians. But, unfortunately, they are just descriptions and nothing more, without any visual representation providing more convincing evidence. And as a visual event, an ideal UFO sighting of the past ought to be supported not only by historical tradition, but also by a representation of it as we know it along with its effects, if any.

Maybe we may find all this in the painting of Masolino da Panicale named "Il Miracolo della Neve" ("The Miraculous Snowfall"). In it we have the visual representation of a very strange event involving Pope Liberius (352-366 A.D.). According to this historical tradition, in a dream the Pope was ordered by angels to build a new church in Rome, right in the place where a miraculous snowfall would manifest itself. On the next day, a strange snow-like substance fell from the sky, contrary to normal weather during a hot August day. The phenomenon was limited to only the area of Rome in which the Santa Maria Maggiore basilica was later built. In Masolino's representation, we see the Roman Pope indicating the perimeter of the future basilica in the area whitened by the miraculous snow, still falling from strange clouds. Christ and the Virgin are observing everything from heaven above, of course. [f]

What was the cause of this "impossible" snowfall? Masolino da Panicale, in his painting, represents a detailed scene of the event, with the snow falling from a big and elongated "cloud," greyish and cigar-shaped,

under which smaller clouds are visible. A close look at these clouds, moreover, shows that they are not ordinary clouds. They are all clearly outlined and not vaporous, and are represented two-by-two and identically, with only their upper part lightened, like most domed DDs.

The event occurred in August, so spider webs ought to be excluded as a possible explanation of this phenomenon. As a matter of fact, Allan Hendry emphasizes in his The UFO Handbook that spider webs usually appear especially during October. On the contrary, if we compare the strange clouds of Masolino's painting with a Daylight Disc photograph from a newspaper allegedly snapped over Siena as "angel's hair" fell on that town in 1954, we must admit that so striking a resemblance seems far from casual. [G] Another evident comparison may be suggested with the three well-known photographs of a typical Daylight Disc moving in the clouds over Namur, Belgium, on June 5, 1955, snapped by a Belgian postman. [G]

Can all this be mere coincidence? Does Masolino da Panicale's detailed painting represent a "sign from Heaven," as Catholic tradition says, or the UFO-related phenomenon known today as "angel's hair"? In any case, this painting of the 15th century might have been inspired by a personal experience of its author and not only by a detailed tradition, after all. We shall never know this, of course.

But we know that similar aerial phenomena were reported in Italy during the 15th century, also. For instance, let me quote Leone Cobelli, an Italian historian of Forli:

In that same year [1487], one day in June, a beam of fire coming from Mount Poggiolo was seen in the sky during the night and it came towards Forli off the walls of Ravaldino castle. . . . Then, next morning, another of these beams of fire appeared. It came from Mount Puzolo and reached the sky just over the central square in Forli. And all the inhabitants of the town saw it. . . .

In that same year, one day in August, a huge star appeared in the sky two hours before dawn, coming from the mountains [Apennines] and moving towards Ravenna. It floated in the air just like a butterfly, and I saw it, too, with many other



F. IL MIRACOLO DELLE NEVE (THE MIRACULOUS SNOW FALL)  
BY MASOLINO DA PANICALE

inhabitants of Forlì. I must say that it seemed a cart wheel flying in the sky, and its appearance lasted some minutes, more or less the time during which a miserere prayer may be said. Some people said they had seen it more than half an hour before, over the mountains. . . .

Interpret all this as "signs from Heaven," as he wrote, or not, these are the eyewitness accounts of Leone Cobelli as they are reported in his Cronache forlivesi (The Forlì Chronicle).

Such a detailed description of a star-like, luminous flying object approaching the ground and hovering over the town of Forlì and the nearby mountains for more than half an hour not only involves multiple sightings in the same region over a long period of time; the object observed is also described as a disc-shaped body, seemingly rotating (like a "cart wheel") and flying erratically ("just like a butterfly"). Besides, two "beams of fire" or cylindrical luminous objects had been previously reported by night as well as in broad daylight. Surely Cobelli's accurate words as a witness do not fit any known or anomalous phenomenon, except the UFO phenomenon, and are not different from what we may read in today's UFO reports.

In any case, a 15th century artist would not be able to hand down to posterity such a direct experience, since at that time painters were allowed only to produce sacred and not profane subjects. An artist's only possibility to do this would have been, then, to insert a representation of such an event in a sacred art subject. An ideal place indeed for "signs from Heaven"!

In our opinion, this is exactly what happened in another 15th century painting, "The Madonna and Baby St. John," a nativity scene attributed to the school of Filippo Lippi, a 15th century Florentine painter. This painting was noticed by chance during a visit to Palazzo Vecchio at Florence, in the Saturn Salon, by a young Italian architect, Mr. Daniele Bedini. Looking at it, in its upper right portion, he could clearly notice the presence of a lead-colored, egg-shaped flying object in the sky, apparently in motion. As Mr. Bedini underlines, "It is possible to imagine the motion by the presence of bright rays. The color of the rays is bright yellow, like gold, all around the object, and

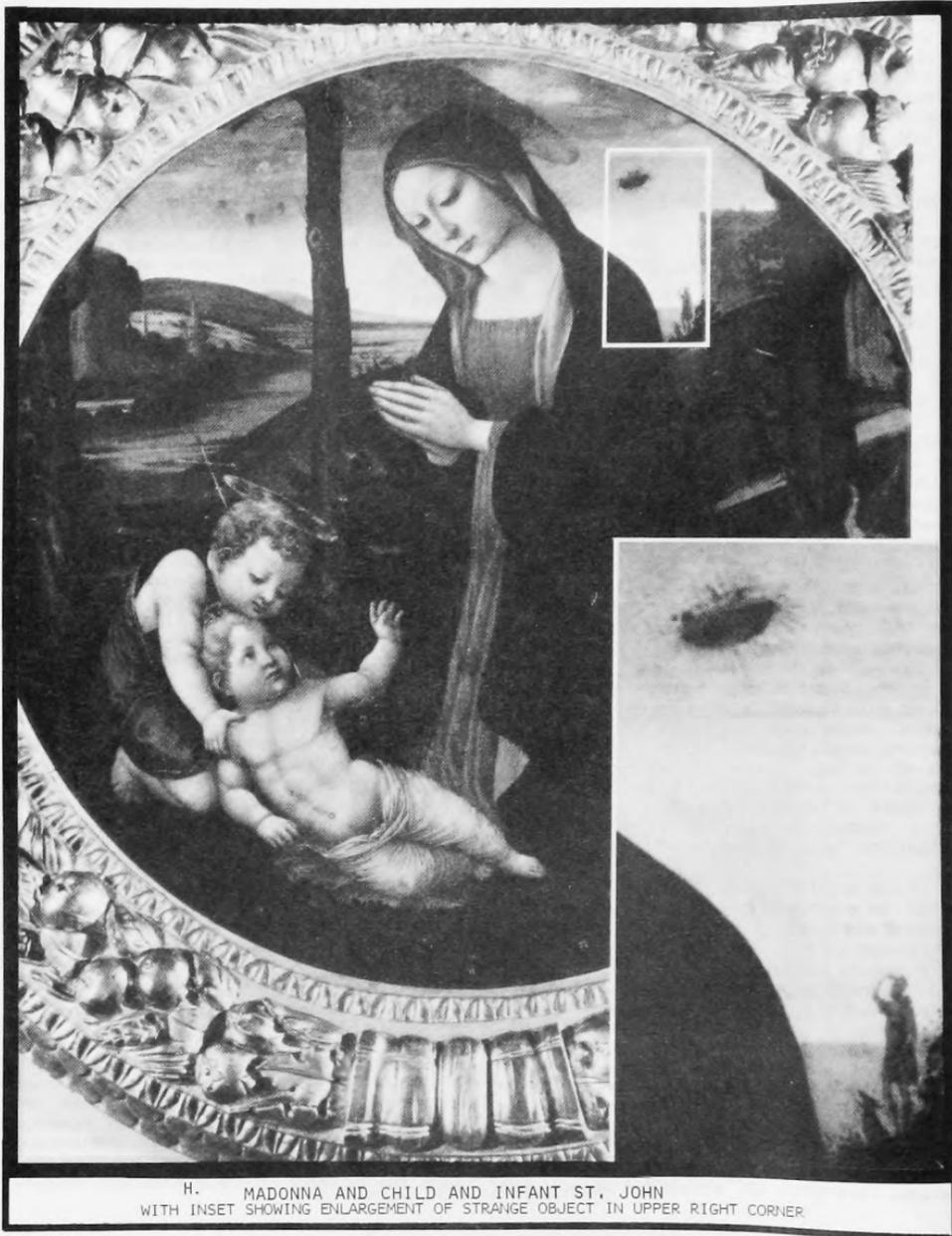
they almost suggest the direction of motion. These factors are in contrast with the complete steadiness of the rest of the painting." [H]

What could this object be? Since this is a nativity scene involving the Virgin Mary with both the baby Jesus and St. John (the Baptist), could it be identified with the Star of Bethlehem? The answer is surely negative, because the miraculous star, as a definite source of light, would have been represented in quite a different way: as a comet-like bright body, and not as an opaque one as in this case. As far as the sun is concerned, we may observe it in the upper left portion with small rays of sunlight below it, clearly in a mystical meaning for God and the Holy Trinity. But no atmospheric, symbolic, mythological or mystical explanation seems possible for the strange lead-colored object surrounded by bright rays hovering over the country in the landscape in the upper right portion of this painting.

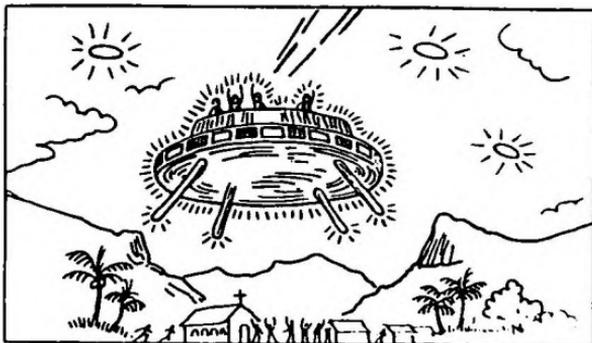
"The object," Mr. Bedini comments, "is being watched by a shepherd at the right of the Madonna, drawn by the painter with his right hand above his eyes looking at the object with all his attention. Besides, it is being watched by the shepherd's dog that is clearly barking, as happens in many cases of UFO sighting reports."

As a matter of fact, the mysterious object is affecting both human and animal reactions in the background scene and no conventional explanation seems possible for it. It is a real enigma still to be solved. It is evident, however, that it has nothing to do with the subject of this painting. And since Filippo Lippi is to be considered an expressive but not compositive painter, his unknown disciple's intention could be just to communicate to the masses through his own work a special personal experience: Was it the sighting of the same unknown phenomenon we call today "unidentified flying objects"?

Today, all this shows that history, tradition and even history of art are beginning to support more and more what yesterday was just a suspicion, and are revealing UFO-like phenomena also in the past. This neo-humanistic comparative approach, if developed successfully, may only confirm the inexplicable nature of UFOs in space and time along with the evidence of their unearthly origin.



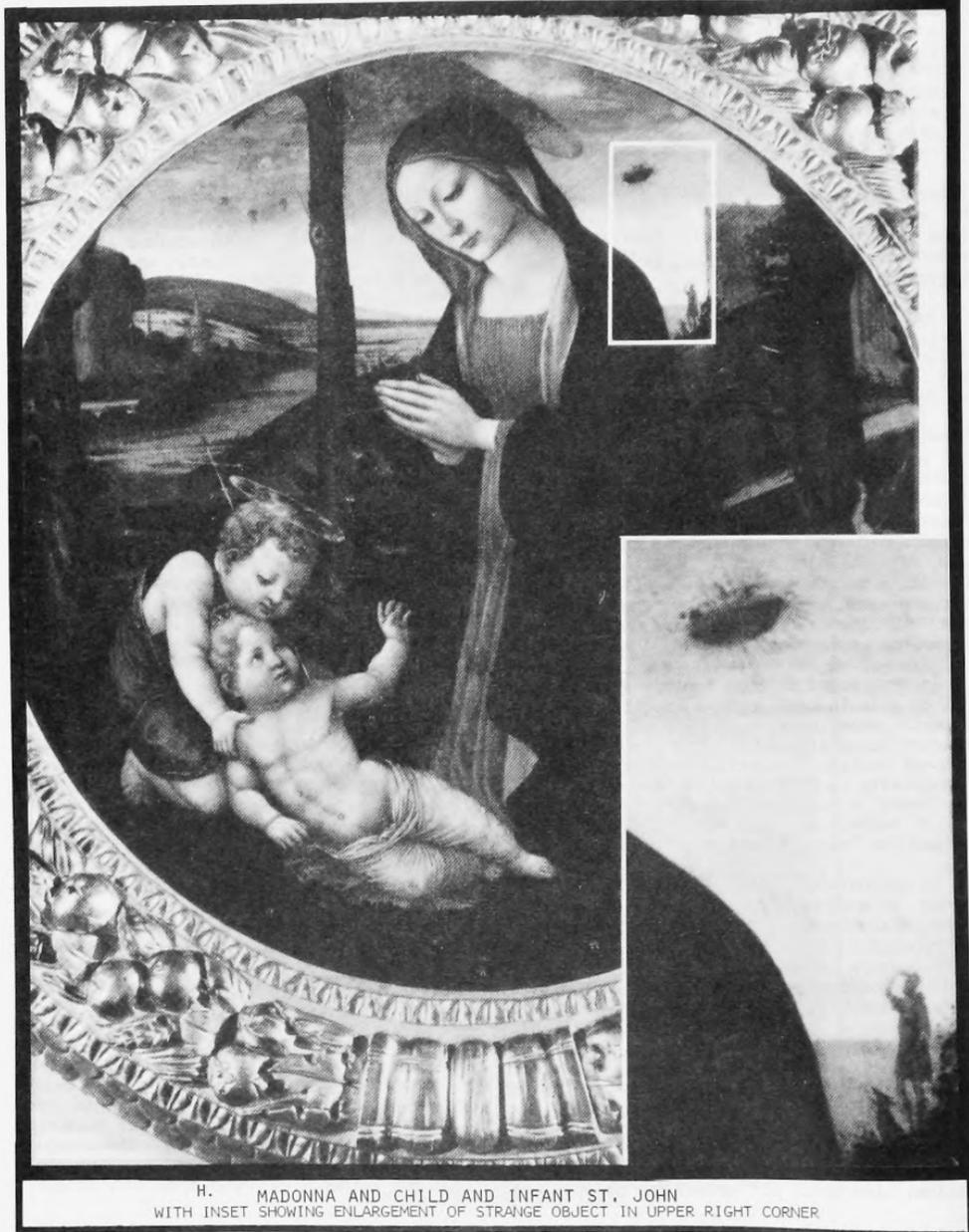
H. MADONNA AND CHILD AND INFANT ST. JOHN  
WITH INSET SHOWING ENLARGEMENT OF STRANGE OBJECT IN UPPER RIGHT CORNER.

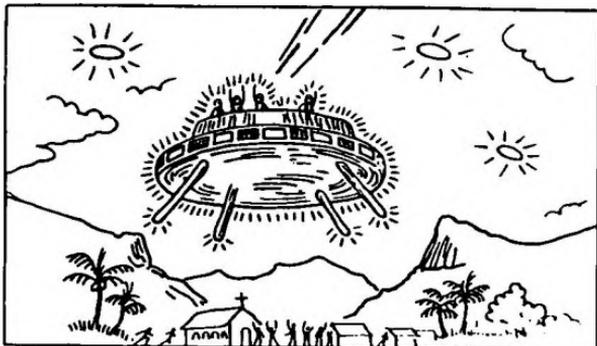


A DRAWING OF THE OBJECT SEEN AT A MISSION AT BOINAI, IN PAPUA NEW GUINEA BY FATHER GILL AND OTHERS OF THE MISSION ON JUNE 27m 1959. THE UFO INVOLVED SEEMS VERY SIMILAR TO THE STRANGE OBJECT IN THE XVTH CENTURY PAINTING OF "THE MADONNA AND CHILD AND INFANT ST. JOHN. A MERE COINCIDENCE?

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A DRAWING OF THE OBJECT SEEN AT A MISSION AT BOINA, IN PAPUA NEW GUINEA BY FATHER GILL AND OTHERS OF THE MISSION ON JUNE 27th 1959. THE UFO INVOLVED SEEMS VERY SIMILAR TO THE STRANGE OBJECT IN THE XVTH CENTURY PAINTING OF "THE MADONNA AND CHILD AND INFANT ST. JOHN. A MERE COINCIDENCE?

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# SIZE, DISTANCE AND DURATION PARAMETERS OF THE IGNITION-INTERFERENCE EFFECT

DONALD A. JOHNSON

UFO reports involving vehicle electrical system interference offer one major advantage over reports involving simple close UFO encounters. That advantage is the presence of a physical device capable of serving as a measuring instrument--a motor vehicle. As McCampbell points out (McCampbell, 1976b, p. 164), "An automobile functions as an instrument notwithstanding its design for other purposes." Viewed in this manner, the severity of the reported effect on the motor vehicle could provide us with the means to test hypotheses about the physical nature of the ignition interference effect, and as a consequence, provide clues about the physical nature of the UFO phenomenon.

In an earlier paper, the role of two variables thought to have a causal connection with severity of reported electrical system interference--position of UFO and distance from UFO--were examined through analysis of contingency tables (Johnson, 1983). The purpose of this paper is to expand on the findings of that paper and provide a more thorough treatment of the data by including in the analysis two additional variables:

size of the UFO and duration of the UFO encounter. These four variables were selected because they could conceivably relate to questions of physical causality of the reported effect.

Reports of motor vehicle electrical system interference during a UFO encounter usually involve no lasting physical effects or damage. The lack of any permanent engine and electrical system damage was one cause of skepticism among investigators during the Air Force-sponsored University of Colorado study. To quote Dr. Roy Craig, "Mechanisms capable of short-circuiting automobile electrical systems do not take into account the claim that normal operation resumes after departure of the UFO" (London & Gilmore, 1969, p. 101). This may have been a premature assessment because today there are at least two untested hypotheses about the mechanism involved that could explain the temporary nature of the observed effect.

We know at least that a strong magnetic field alone would not be a likely cause for the engine failures. In an experiment

conducted for the University of Colorado study by a national laboratory, insignificant effects were measured for the spark plugs and battery in very strong magnetic fields up to 20,000 gauss. For the common steel encased coil, the spark was occasionally interrupted at 20,000 gauss (Condon & Gilmore, 1969, p. 102). Such intense magnetic fields would permanently alter the magnetic signature of the car's body which could be readily detected after the event by mapping the car body's magnetic pattern with a magnetometer. Evidence from the few cases where magnetic-mapping has been done indicates that exposure to intense magnetic fields has not occurred.

The University of Colorado study experiment was criticized by some as too simple-minded in its approach. Saunders questioned why the effect of a fluctuating electromagnetic field was not examined; fluctuating electromagnetic fields might have effects upon the engines, radios, and headlamps of an automobile without altering the magnetic signature of the car body (McC Campbell, 1976a).

McC Campbell contends that high-frequency electromagnetic radiation is an excellent candidate for the cause of engine failures. In his 1976 book, he offers two contending hypotheses to explain the mechanics involved. First, high intensity microwave radiation might be found capable of inducing high-voltage surges in the secondary winding of the coil. The resulting sparks in the cylinder would be completely out of time with the sequence of events required to run the engine. With the timing off, the engine would run poorly or not at all. A second physical basis is the increase of resistivity of tungsten in the presence of microwave energy. The distributor points, being made of tungsten alloy, would be subject to interference because increasing resistance would reduce the flow of current (McC Campbell, 1976a, pp. 58-59).

If the cause of the ignition interference effect is high frequency electromagnetic radiation, as McC Campbell and some others contend (McC Campbell, 1976a), then one should expect to observe the phenomenon following certain well-defined physical parameters. First, one should expect to observe an inverse relationship between distance and intensity of effect. This relationship could correspond to the inverse square law (force

being inversely proportional to the square of the distance) or some other power function relationship obeyed by electromagnetic energy. Second, since the energy requirements for generating this high-intensity radiation must be considerable, it would make sense to expect that a larger radiation source would require a larger generating capacity for that source. Size of object should therefore play a role in intensity of effect.

Third, in order for the high intensity radiation to have the necessary effect on the components involved, the application must be of a sufficient duration. We would therefore predict that there might need to be some critical duration for the event which must be reached before the force can have its full effect. If the tungsten resistivity theory holds true, this duration may vary somewhat from automobile to automobile depending upon the alloys used in construction of key components. The role of position was explored earlier, and may relate to the degree of exposure of the engine components to the source of the radiation, particularly with the vehicle's headlights.

Therefore, if a physical mechanism does exist that can link the presence of a UFO to the ignition interference effect, the intensity of the effect should be governed by duration of exposure, proximity to the source, size or intensity of the source, and the possible advantageous positioning of the source. Ability to predict the intensity of the electromagnetic interference response based on these parameters should be high, assuming a rough equality between automobiles (and excluding diesel-powered vehicles from the analysis). This predictability is precisely what shall be examined by this study.

#### Method

A computer-generated listing of all possible cases involving electromagnetic effects in the vicinity of a UFO and also involving a motor vehicle was obtained in November 1978 from the Center for UFO Studies' (CUFOS) computerized catalogue of UFO reports (UFOCAT). This listing contained 570 cases. Working from this and a few other sources, an eventual file of 289 cases was compiled that involved confirmed reports of motor vehicle ignition or electrical system interference attributable by the witnesses to

a close UFO encounter. These cases involved headlights and engine neut failure and complete failure, but were limited to cases involving land vehicles and did not include reports of car radio interference.

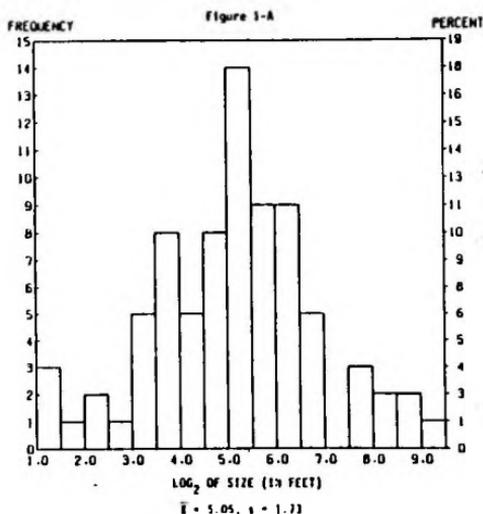
After an extensive screening process, 78 cases were selected for analysis on the basis of their completeness for size, distance, and duration information. Size and distance estimates were converted to a common measure (feet) and duration estimates were converted to minutes. Position was coded as a trichotomous variable: a "2" was coded for those cases reporting the UFO directly in front of the vehicle (e.g., on or above the highway), a "1" for those cases reporting the UFO as directly above the hood or roof of the car, and a "0" for all remaining cases. This ordinal coding system was intended to correspond to McCampbell's theory and the results of the earlier study, ranking position with efficacy of effect (Johnson, 1985).

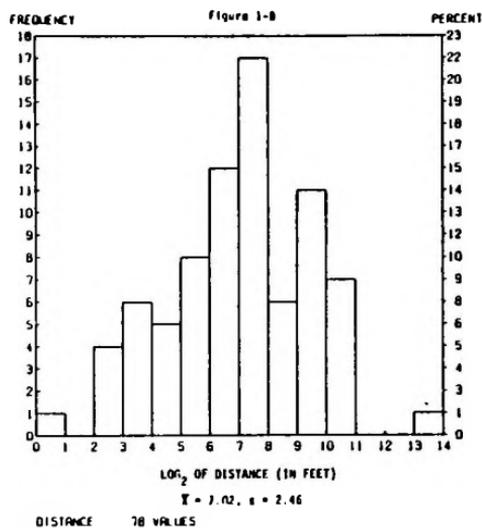
Because of the extreme right-tail skewness of the size, distance, and duration estimates, and because it was felt that inaccuracies in estimate would be proportional to the size of the estimates, a logarithmic transformation was performed on these three variables. Without a transformation of this sort, extreme outliers would unduly influence the correlation between the predictor variables and the criterion. Proportionality of error with size of estimate may be explained by example. It was believed that because the number of visual perceptual cues used to discern distance generally increase as an object draws closer, a distance estimate of a near object would have less error attached to it than a distance estimate of an object further away. A distance estimate of 20 feet (6.10 meters) may on the average be off by plus or minus 5 feet, but a distance estimate of 200 feet (60.96 meters) may be off by as much as 50 feet on the average.

By analogy the same would be true for size estimates, and indeed, a positive correlation does exist between size estimates ( $r = .49, p < .001$ ) indicating that there may well be some reliance upon size to make distance estimates and vice versa. Of course, duration estimates may be based upon on-the-spot wrist watch time measurements, in which case the proportionality of error to size of estimate argument would not hold.

However, during and/or after the usually high emotional excitement of a UFO sighting, a person may totally forget to check his or her watch. In this case, a much less accurate estimate of the duration of the event may be obtained. Haines (1980) reports that people have a critical time interval where their estimation errors are smallest. As the time interval is lengthened beyond this "critical duration," their errors will increase in size. Since this "critical duration" is usually brief and on the order of a few minutes, time durations longer than this can be expected to have error proportional to the duration. A log transformation would correct for this.

A base-2 logarithmic transformation was chosen, but because these values were later standardized for analysis, the choice among base-2, natural log, or common log transformation made little difference. The purpose, to remove the disproportionate effect of extreme values and reduce the amount of error measurement contained within the estimates, would have been achieved using any. Histograms for the transformed variables are presented in Figures 1-A, 1-B, and 1-C. As can be seen, the effect of the transformations is to bring the shape of the distributions very close to normal curves. While normality is not a necessary condition for discriminant function analysis, it is not an undesired effect.



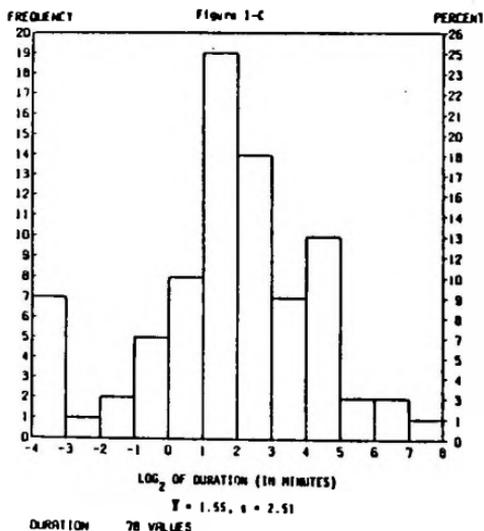


The 78 cases were categorized into two groups: group 1 consisting of those cases where the intensity of the ignition interference effect was not sufficient to bring the motor vehicle to a complete stop ( $N = 15$ ); and group 2 consisting of those cases where the vehicle was forced to a complete stop ( $N = 63$ ). It was found under re-examination of the better documented cases that often what is carelessly reported in the literature as an ignition stall was, under closer examination, reported by the witnesses as a complete stop, and not a stall. That is, the witness or witnesses could detect the engine still operating, but so poorly that it could not power the vehicle. Such testimony made a "stall/no stall" categorization scheme highly suspect, since the investigator could not confidently rely upon second-hand testimony that the engine did indeed actually stall, and had to be restarted. For this reason, it was felt that basing the dichotomy on whether the vehicle came to a complete stop would be more reliable.

For the purposes of this analysis, only the effect upon the vehicle's ignition system was used as the criterion variable. Headlight failure, while a good candidate,

was not included because only 43% of the cases made reference to whether the headlights remained on or not, and in some cases the witnesses were not sure whether the headlights were also affected. Only a relatively few cases happened during the daylight hours when the lights would not be in use, but they too would had to have been excluded from the analysis if headlight failure was considered.

The three transformed variables and the trichotomous position were then included in a discriminant function analysis to determine the predictability of the intensity of the ignition interference effect. The variables were entered in a stepwise procedure, using reduction in Wilk's lambda as the selection criteria.\*



\*The computer program incorporated in the SPSS statistical package DISCRIMINANT procedure was used to perform the discriminant function analysis, documentation for which may be found in Nie et al (1975). The cluster analysis was performed using the program P2M in the BMOP series statistical package, described in the manual edited by Dixon & Brown (1979).

In order to assist in the interpretation of the discriminant function analysis results, a hierarchical cluster analysis was performed on the cases, using Euclidean distances between the three (standardized) logarithmic variables to determine clustering. The formula for the distance between points  $i$  and  $j$ , denoted by  $d_{ij}$  is defined as

$$d_{ij} = \sqrt{(a_i - a_j)^2 + (b_i - b_j)^2 + (c_i - c_j)^2}$$

where  $(a_i - a_j)$  represents size differences,  $(b_i - b_j)$  represents distance difference, and  $(c_i - c_j)$  represents the duration difference between cases  $i$  and  $j$ .

The 78 cases used in the analysis can be found listed in the tables for the results of the cluster analysis. Discussion or exemplification of details of particular cases will be limited to the presentation of patterns and outliers. For the individual details of each case, the reader is referred to Mark Rodeghier's catalogue on ignition interference cases (Rodeghier, 1981).

## Results

The three transformed variables--duration, size, and distance--were found to be significant predictors of intensity of effect. The position variable did not achieve the minimal level of significance and so was not included in further analysis. Duration had the highest correlation with intensity of effect and entered the equation first ( $F_{1,76} = 13.40, p=.0005$ ), size entered the equation second ( $F_{2,75} = 7.18, p=.0009$ ), and distance entered third ( $F_{3,74} = 5.77, p=.0013$ ). The resulting discriminant function with three predictor variables had a canonical correlation of .44, which is in the moderate range. The equation for the linear combination of predictor variables maximizing the ratio of the between-groups sum of squares to the within-groups sum of square is

$$Y = .562 X_1 - .403 X_2 + .824 X_3$$

where  $X_1$  represents the standardized size estimate,  $X_2$  the standardized distance estimate, and  $X_3$  the standardized duration estimate. In terms of relative importance, the

ratios between the weights for the three factors clearly show that duration is about twice as important as distance, and about one and a half times as important as size. Size is in turn about one and a half times as important as distance.

In geometric representation, the equation represents a plane slicing through the three-dimensional space occupied by the reports. Any case represented by a point falling on a plane would be theoretically equivalent to any other point falling on that plane, in terms of the intensity of the interference response it produces. The three coefficients in the equation having defined the orientation of a plane, the exact position of the plane is determined by the discriminant score,  $Y$ , derived from the  $X_i$  values.

A stacked frequency histogram of the discriminant scores derived for both criterion groups is shown in Figure 2. This frequency histogram is produced by projecting the points in each plane onto a set of lines in two-dimensional space. The points in two-dimensional space are in turn projected onto a line constructed perpendicular to the set of parallel lines (Cooley & Lohnes, 1971). The average of the discriminant scores for the first group, or the centroid for the first group, was found to be equal to  $-.98$ . The centroid for the second group was found to be  $.23$ . Thus we can see there is a clear separation between the means of the two groups, although there is unfortunately still a fair degree of overlap between the two groups.

Providing the computer with estimates of what the prior probabilities of membership would be in the total population of cases allows the calculation of conditional probabilities of membership in the two groups. In this case, the prior probabilities were set at .25 for the first group (no stop) and .75 for the second group (complete stop). The classification results are provided in Table 1. The discriminant score cutpoint between the two groups was found to be  $-1.25$ , which is also shown in Figure 2. We found that 67 out of 78 cases, or 86%, were correctly classified into their actual groups.

We next turn to the results of the cluster analysis. In an agglomerative method of cluster analysis such as used in this

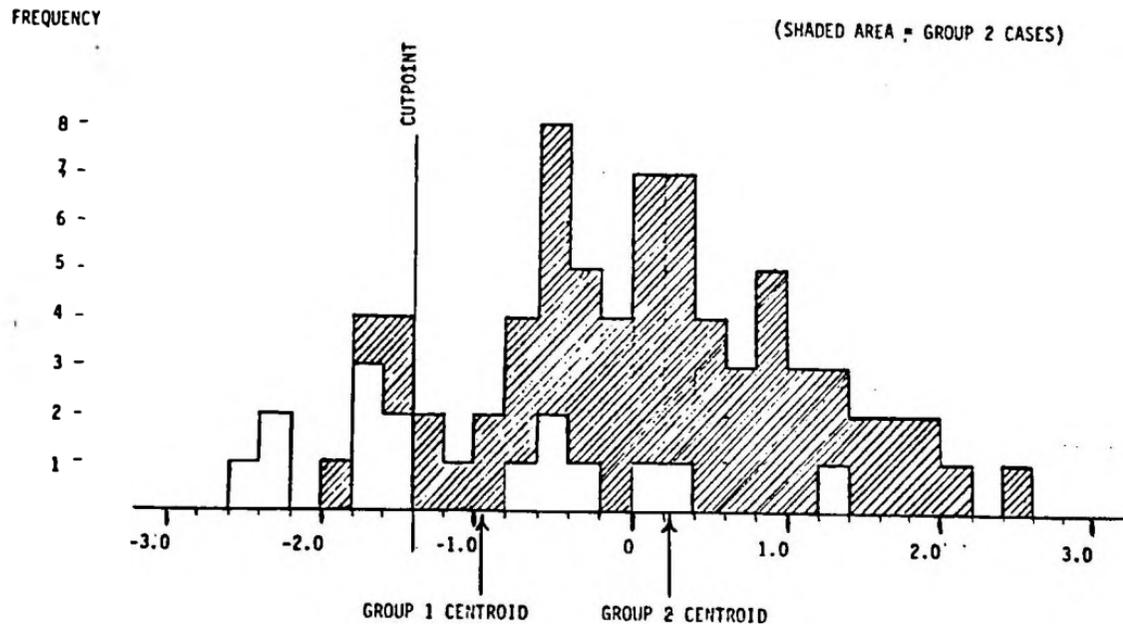


Figure 2: Stacked Histogram of Discriminant Function Scores

Table 1

CLASSIFICATION RESULTS FOR IGNITION  
INTERFERENCE DISCRIMINANT FUNCTION ANALYSIS

Actual Group	Predicted Group Membership		No. of
	<u>Group 1</u>	<u>Group 2</u>	<u>Cases</u>
Group 1 (No Stop)	8 53%	7 47%	15 100%
Group 2 (Complete Stop)	4 6%	59 94%	63 100%

Percent of Both Groups Correctly Classified -- 86%

research, the data are not merged into clusters in one step. Rather, the procedure begins with as many clusters as there are cases and proceeds to join cases together in a stepwise manner. Since all agglomerative hierarchical techniques ultimately reduce the data to a single cluster containing all the entities, the investigator needs to decide at which step in the analysis he or she wishes to stop (Everitt, 1980). There is no satisfactory rule that can be universally applied, and since cluster analysis is basically a descriptive procedure, the investigator can feel justified in stopping when he or she feels the clearest picture has emerged.

The decision rule applied on concluding that there were seven clusters in this data set was basically twofold: to stop when and if there was a definitive jump in the distance needed to bridge two clusters, and to stop when individual reports were no longer being merged to clusters but rather large clusters began to be merged together into an amorphous form. Applying this combined rule, it was decided to stop at step 6B. This resulted in seven clusters and three unmerged reports. In the case of two of the reports, it was apparent which clusters they would eventually join. One report (Urograndø, N.M.) was an extreme outlier and represented a cluster unto itself.

Figure 3 provides a dendrogram of how the remaining clusters would have eventually joined. The diagram is useful in comparing overall similarity among clusters.

In examining the data, it becomes obvious that Cluster 1 (Table 2-A) is typified by very small objects that appear for a brief duration at very short distances. Due to the nature of these characteristics, it appears that at least some of the members of this cluster are good candidates for being the result of a naturally caused atmospheric phenomenon. We can feel confident that the clustering algorithm is doing its job by noting that it has combined two cases that occurred chronologically and geographically close to each other, the Everett, Wash., and Aberdeen, Wash., cases. The objects in both cases were featureless spheres of light about two feet (0.6 meters) in diameter.

Cluster 2 (Table 2-B) also consists of small objects, but in this cluster the objects are moderately distanced with the encounter lasting for a medium duration. The only case not resulting in a complete car stop (Winsted, Conn.) may not be an outlier, for in this case the witnesses had stopped the engine of their car to listen for sounds from the UFO, and the driver reported difficulty restarting the car.

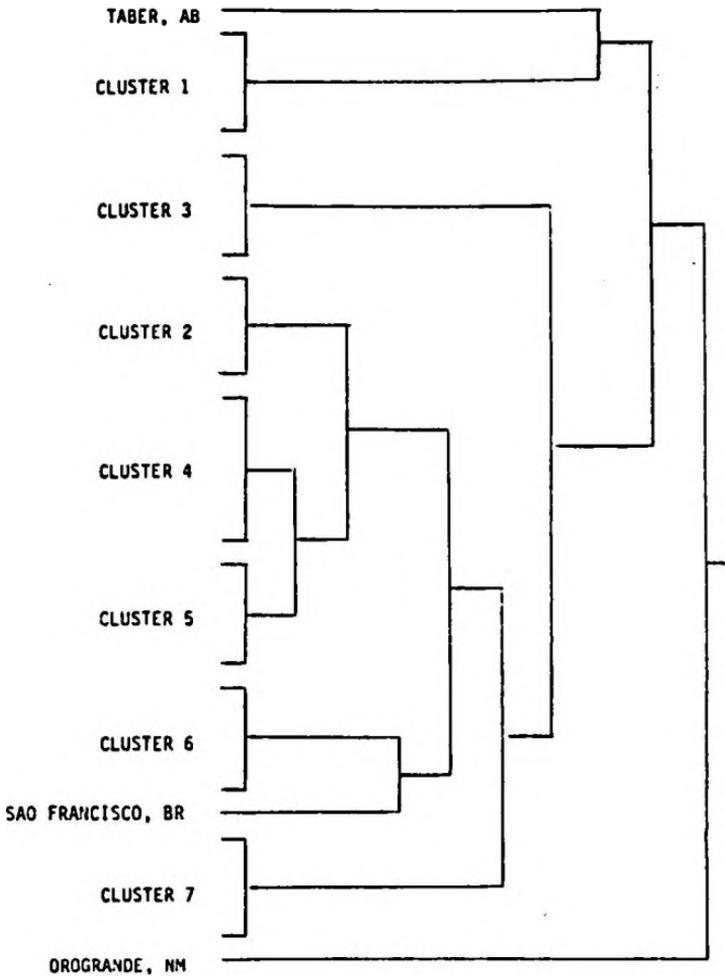


Figure 3: Dendrogram of How Clusters Would Eventually Merge

Table 2-A: Cluster 1 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Nakatocis, MS	early 1958	3.91	3.91	1.00	2	2	2
Millinocket, ME	05-24-64	1.30	3.00	2.32	0	2	2
Lavonia, GA	06-29-64	3.00	2.32	0.00	2	1	2
Vicksburg, MI	03-31-66	3.60	3.32	0.00	1	2	2
Tilshhead, GB	09-24-66	3.70	4.91	0.00	0	2	2
*Taber, AB	09 - 67	3.32	0.00	-3.32	1	2	2
Ririe, ID	11-02-67	3.00	2.32	0.00	2	2	2
Fordingbridge, GB	11-11-67	3.91	5.49	1.00	2	2	2
Everett, WN	12-05-70	1.00	3.90	-1.00	1	1	1
Aberdeen, WN	01-03-71	1.00	4.81	-0.32	1	2	1
Algodonales, ES	06-09-72	2.71	4.04	1.00	2	2	2
Alcaracejos, ES	07-10-72	<u>2.03</u>	<u>5.49</u>	<u>-3.32</u>	0	1	1

$$\bar{X} = 2.79 \quad 3.63 \quad -0.22$$

$$SD = 1.09 \quad 1.58 \quad 1.68$$

mean size = 7 feet

mean distance = 12 feet

mean duration = 52 seconds

Table 2-B: Cluster 2 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Banner Elk, NC	04-08-67	2.00	7.49	2.32	0	2	2
Winsted, CT	02-21-68	3.60	7.23	3.91	0	1	2
Cazalla, ES	04-22-73	1.71	6.62	1.00	0	2	2
Sousas, BR	06-07-73	3.58	7.36	3.32	2	2	2
Hombreiro, ES	03-30-74	<u>3.71</u>	<u>7.41</u>	<u>1.59</u>	0	2	2

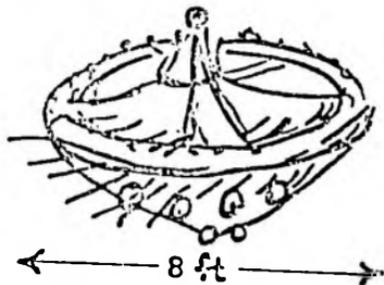
$$\bar{X} = 2.92 \quad 7.23 \quad 2.43$$

$$SD = .98 \quad .32 \quad 1.19$$

mean size = 8 feet

mean distance = 150 feet

mean duration = 5.4 minutes

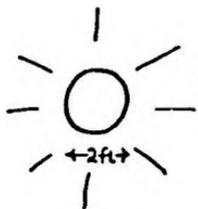


June 29, 1964

LAVONIA, GA

CLUSTER 1

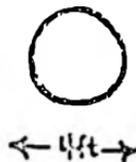
Strange Effects from Ufos, p.5



December 5, 1970

EVERETT, WN

CLUSTER 1

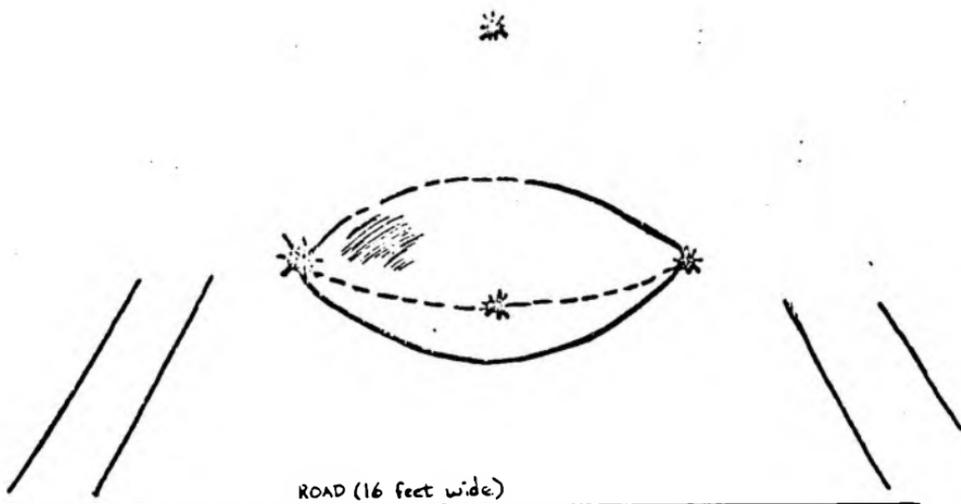


July 10, 1972

ALCARACEJOS, ES

CLUSTER 1

Ballester Olmos

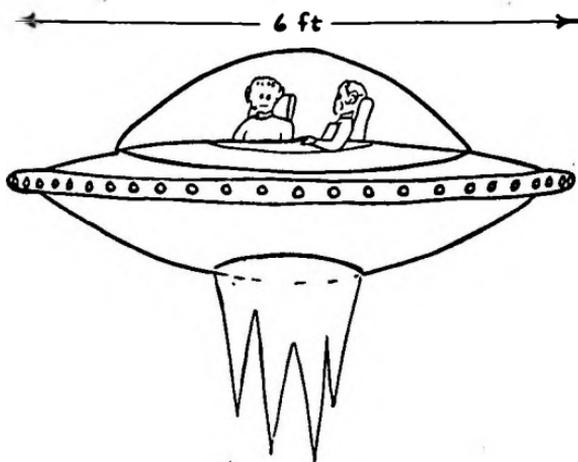


March 31, 1966

VICKSBURG, MI

CLUSTER 1

Lore, UFOs: A New Look, p.23



November 2, 1967

RIRIE, ID

CLUSTER 1



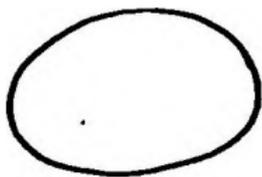
← 30 ft →

April 22, 1973

CAZALLA DE LA SIERRA, ES

CLUSTER 2

Ballester Olmos



← 13ft →

March 30, 1974

HOMBREIRO, ES

CLUSTER 2

Ballester Olmos

Cluster 3 (Table 2-C) is similar to Cluster 1 in that the encounters are of very brief duration, averaging 11 seconds. We are still dealing with rather small objects, although these objects are about twice the diameter as those in Clusters 1 and 2. The major difference from Cluster 1 is distance: Cluster 3 objects are moderately far away. This cluster can also be presumed to contain some cases of misidentified atmospheric phenomena, although the description of the maneuvers and physical appearance precludes this possibility for some of the reports.

Cluster 3 is of major interest because it contains the majority of cases with incomplete ignition interruption. In fact, Clusters 1 and 3 are the only clusters where incomplete ignition interruptions are predicted. As the contingency table analysis in Table 3 shows, there is a significant differ-

ence between clusters for the ignition interference effect ( $\chi^2_6 = 20.82, p < .005$ ), primarily because of Clusters 3 and 1. This finding reinforces the results of the discriminant analysis.

If any group represents the typical ignition interference UFO report described in both the factual and fictional literature, it is Cluster 4 (Table 2-D). Cluster 4 also contains the most members ( $N=28$ ). The objects reported tend to be very homogenous in size, averaging 45 feet (13.7 meters) in diameter. In terms of shape, half of the reports are of the classic domed-disk variety. The objects are reported at an average distance (approximately 200 feet, or 60 meters), and the event lasts for an average of two and one-half minutes. Eighty-six percent of the cases result in the motor vehicle coming to a complete stop.

Table 3

Vehicle Interference Effect by Cluster

		CLUSTER							
		1	2	3	4	5	6	7	
NO	CAR STOP	3	1	6	4	0	0	1	15
CAR STOP		9	4	2	24	10	8	5	62
		12	5	8	28	10	8	6	77

Pearson's Chi-square = 20.82,  $p < .005$   
degrees of freedom = 6

Table 2-C: Cluster 3 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Maubeuge, RF	11 -- 54	3.30	8.36	-2.32	0	1	1
Abilene, KS	09-04-65	4.04	6.62	-1.74	2	1	1
Cyrus, MN	11-16-65	3.32	10.37	-1.74	0	1	1
Tully, QD	01-19-66	4.64	6.23	-3.32	0	1	1
Figueras, ES	10 -- 66	5.62	6.62	-3.32	0	2	1
Itajuba, BR	06-07-67	4.04	6.36	-3.32	0	2	1
Normandy, RF	03-18-72	4.04	9.36	-0.51	0	1	1
Hobart, TA	08-05-75	<u>6.32</u>	<u>8.81</u>	<u>-3.32</u>	0	1	1
	$\bar{X}$ =	4.42	7.85	-2.45			
	SD =	1.07	1.58	1.06			

mean size = 21 feet

mean distance = 230 feet

mean duration = 11 seconds

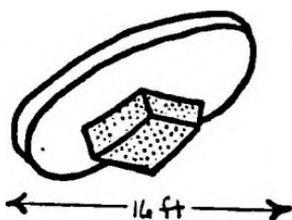
Table 2-D: Cluster 4 Reports

LOCATION	DATE	LOG SIZE	LOG DIST.	LOG DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Casper, WY	10-30-57	6.00	7.97	-1.00	2	2	2
Levelland, TX	11-03-57	7.64	7.64	1.00	2	2	2
Loch Raven, MD	10-26-58	6.64	6.32	0.00	2	2	2
Vaddo, SV	11-16-58	5.67	7.49	2.00	0	2	2
Aston Clinton, GB	02-09-62	5.32	5.91	-1.00	2	1	2
Salta, RA	11 -- 62	6.04	10.68	1.00	1	2	2
La Rioja, RA	05-10-64	5.62	6.05	1.00	0	2	2
Staunton, VA	12-21-64	6.97	7.64	1.00	2	2	2
Sudbury, MA	09-15-65	5.00	7.64	1.00	1	1	2
Long Prairie, MN	10-23-65	5.13	4.32	1.59	2	2	2
Montauk, NY	03-30-66	5.97	9.45	2.32	0	2	2
Split Rock, NJ	10-15-66	4.78	5.91	0.00	1	2	2
Taylorville, IN	11-30-66	4.64	9.55	2.00	0	1	2
Methuen, MA	01-20-67	5.32	7.64	2.32	0	2	2
Leominster, MA	03-08-67	5.41	9.23	2.00	0	2	2
Jonestown, PA	04-05-67	4.91	4.91	1.00	2	2	2
High River, AB	10-11-67	5.00	9.97	2.00	1	2	2
Boyup Brook, AU	10-31-67	5.00	6.64	2.32	2	2	2
Lake Elsinore, CA	11-08-67	4.91	7.32	2.00	2	2	2
Ithaca, NY	12-12-67	5.91	7.49	2.81	0	2	2
Syracuse, NY	03-03-68	6.02	7.64	1.58	1	1	2
La Pastora, RA	07-25-68	5.00	6.84	2.32	2	2	2
Plattville, IL	01-25-69	5.00	10.37	1.00	1	2	2
Docking, GB	06-19-69	6.00	10.37	0.58	0	2	2
Haderslev, DK	08-13-70	5.04	6.04	2.32	1	2	2
Ibstock, GB	05-25-71	5.49	6.49	1.00	0	2	2
Kadina, SA	08-08-71	4.91	7.23	1.58	1	2	2
Hobart Arpt., TA	07 -- 75	<u>4.04</u>	<u>9.69</u>	<u>1.00</u>	2	2	2
	$\bar{X}$ =	5.48	7.66	1.31			
	SD =	.76	1.70	.97			

mean size = 45 feet

mean distance = 202 feet

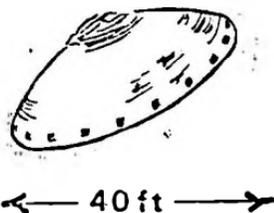
mean duration = 2.5 minutes



June 7, 1967

ITAJUBA, BR

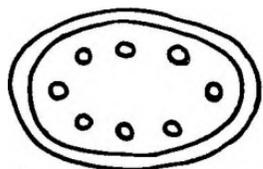
CLUSTER 3



February 9, 1962

ASTON CLINTON, GB

CLUSTER 4



(bottom view)

September 15, 1965

SUDBURY, MA

CLUSTER 4

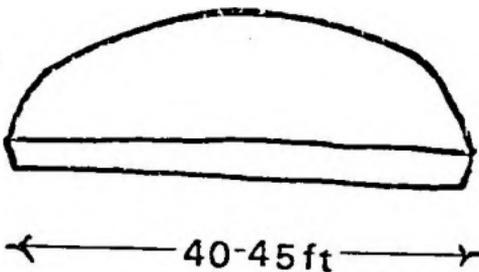


October 15, 1966

SPLIT ROCK, NJ

CLUSTER 4

Fowler, UFOs, Interplanetary Visitors, p. 204

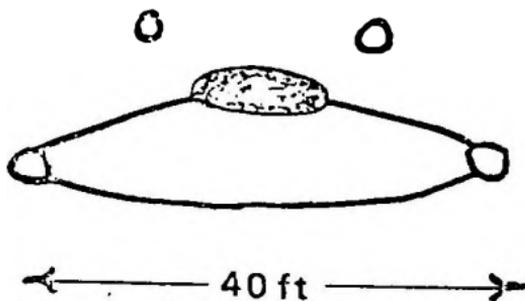


March 8, 1967.

LEOMINSTER, MA

CLUSTER 4

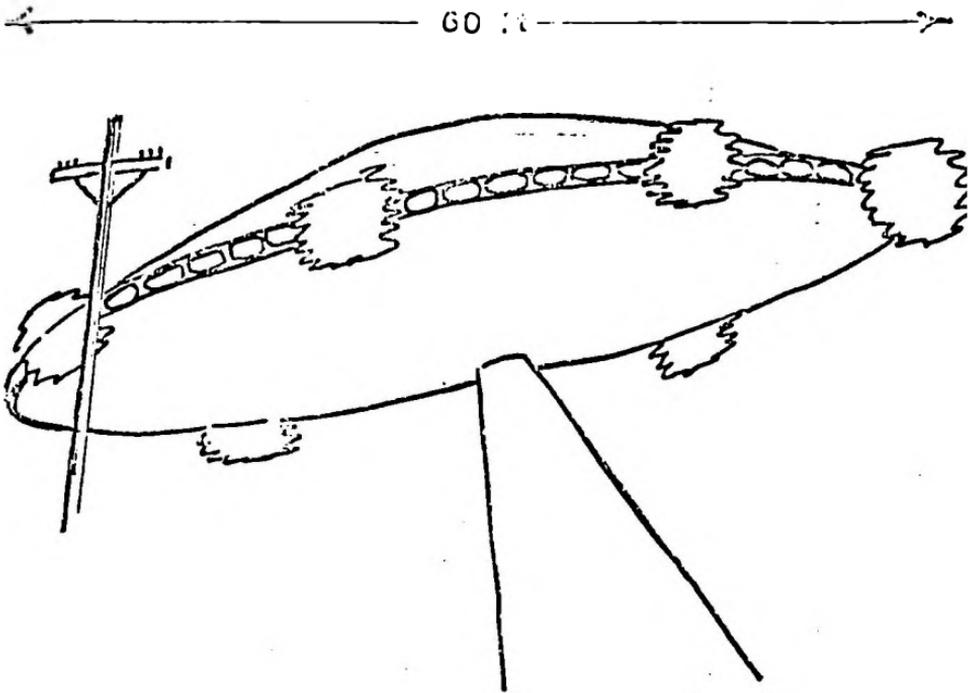
Fowler, p. 206



January 20, 1967

METHUEN, MA

CLUSTER 4

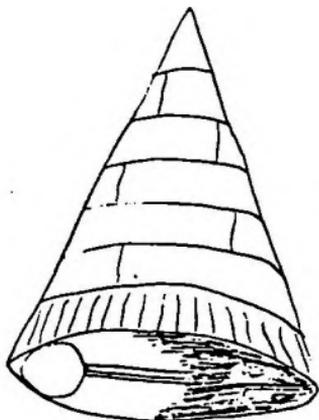


December 12, 1967

ITHACA, NY

CLUSTER 4

Science & Mechanics, July 1968, p. 30



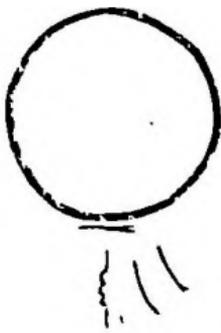
← ~32 ft →

January 25, 1969

PLATTVILLE, IL

CLUSTER 4

Merritt



← ~16 ft →  
(5m.)

July 1975

HOBART AIRPORT, TA

CLUSTER 4

CUFOS - ACOS

Table 4

Occupant Reports by Cluster

		CLUSTER							
		1	2	3	4	5	6	7	
NO	OCCUPANTS	11	5	6	27	8	3	5	65
OCCUPANTS		1	0	2	1	2	5	1	12
		12	5	8	28	10	8	6	77

Pearson's Chi-square = 18.55,  $p = .005$   
 Degrees of freedom = 6

The objects in Cluster 5 (Table 2-E) appear similar to the Cluster 4 objects in size and shape. Cluster 5 objects average 53 feet in diameter and 60% of the objects are described as disk-shaped. What sets Cluster 5 apart from Cluster 4 is that the behavior of the objects is very different. Cluster 5 is typified by objects that keep their distance from the witnesses. The UFO in this scenario maintains a distance of at least 400 to 500 feet (the average distance is 516 feet, or 157 meters), and it stays there for a relatively long period of time. As a consequence, the witnesses are immobilized for a relatively long period of time as well, averaging a 29-minute wait. One report described what appeared to be an object undergoing repair work (Boulder, Colo.). The witness watched as a metallic-looking panel was pulled inside the craft and replaced by another. No surprisingly, perhaps, given the long duration associated with these reports, all resulted in complete car stoppages.

In contrast to the standoffish nature of Cluster 5 reports, Cluster 6 (Table 2-F) encounters occur uncomfortably close, with an average distance of only 20 feet (6 meters). Once again we have objects similar in size to Clusters 4 and 5, averaging 40 feet (12 meters) in diameter. A 40-foot diameter object 20 feet away would fill most of the observer's visual field. Cluster 6 is exceptional in other respects as well. Sixty-three percent of the witnesses reported seeing occupants associated with the UFO, 50% reported some attempt at contact on the part of those occupants, and 50% of the cases

resulted in physiological effects. Three of the reports include abduction. This is clearly a grouping of high "strangeness" close encounter reports. All of the cases result in stalls, and the encounters last from several minutes to four hours.

Table 4 illustrates another significant finding with respect to the clusters, dealing with the occurrence of occupant reports.\* It is clear from examining the table that it is uncommon to encounter occupants associated with the smaller-sized objects of Clusters 1, 2, and 3, and more common to find them associated with the larger objects, but especially with Cluster 6. The Chi-square value associated with the table is 18.55; with 6 degrees of freedom, it is significant at  $p = .005$ . In terms of association, Cramer's  $V$  was found to equal .49 (Nie et al, 1975).

\*A few eyebrows may be raised at the use of Pearson's Chi-square test with cell frequencies as low as those reported in Tables 3 and 4. Many of us have been taught that all expected values in a contingency table should be greater than 5 for the Chi-square test to be valid. However, Everitt (1977) cites numerous sources that show that a number of the expected values in a table may be as low as 1 without greatly affecting the validity of the test. Even this rule is considered conservative by many authors and in the majority of cases, the Chi-square criterion may be used for tables so long as the expected value is in excess of 0.5 in the smallest cell.

Table 2-E: Cluster 5 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Serdon, RF	09 -- 56	6.00	9.36	6.49	1	2	2
Tonopah, NV	11-23-57	5.64	10.04	4.32	0	2	2
Conceicao, BR	02-24-58	6.08	7.97	6.49	1	2	2
Boulder, CO	08-11-60	6.64	9.34	3.91	0	2	2
Hook, GB	10-26-67	5.91	8.23	4.32	2	2	2
La Atalaya, RA	07-29-68	6.00	9.68	5.49	2	2	2
Caleta Buena, RC	09-24-71	6.04	8.92	4.32	0	2	2
Petal, MS	10-07-73	5.00	8.23	4.64	1	2	2
Warneton, BE	01-07-74	4.80	8.94	4.32	0	2	2
Valdehijadros, ES	03-21-74	<u>5.30</u>	<u>9.36</u>	<u>4.32</u>	2	2	2
	$\bar{X}$ =	5.74	9.01	4.86			
	SD =	.56	.68	.95			

mean size = 53 feet

mean distance = 516 feet

mean duration = 29 minutes

Table 2-F: Cluster 6 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Pajas Blanca, BR	01-05-57	5.91	5.64	4.32	2	2	2
Cecil NAS, FL	08-22-57	5.62	3.32	5.32	2	2	2
*Sao Francisco, BR	10-16-57	5.13	5.64	7.91	2	2	2
Kearney, NE	11-05-57	6.64	5.91	4.91	2	2	2
Salto, UR	08-15-65	4.32	3.52	4.32	2	2	2
Ashland, NE	12-03-67	4.70	5.32	4.32	2	2	2
Atlanta, MO	03-04-69	6.64	2.59	3.00	2	2	2
Nuez, ES	08-23-71	<u>3.71</u>	<u>2.71</u>	<u>3.32</u>	0	2	2
	$\bar{X}$ =	5.33	4.33	4.67			
	SD =	1.06	1.42	1.51			

mean size = 40 feet

mean distance = 20 feet

mean duration = 25 minutes

Table 2-G: Cluster 7 Reports

LOCATION	DATE	LOG <sub>2</sub> SIZE	LOG <sub>2</sub> DIST.	LOG <sub>2</sub> DURA.	POS.	ACTUAL GROUP	PREDICTED GROUP
Melbourne, VC	01-03-55	9.00	7.84	1.00	2	2	2
Ceres, BR	10-10-57	8.71	6.91	2.32	2	2	2
Levelland, TX	11-03-57	7.64	10.37	0.00	2	2	2
Elmwood Park, IL	11-04-57	7.64	7.36	3.32	2	1	2
Villareal, ES	11-02-68	8.23	10.68	1.58	0	2	2
Kenyon, RI	12-17-77	<u>8.00</u>	<u>9.45</u>	<u>3.32</u>	0	2	2
	$\bar{X}$ =	8.20	8.77	1.92			
	SD =	.56	1.61	1.32			

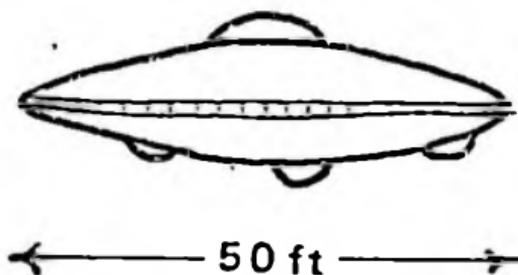
mean size = 294 feet

mean distance = 437 feet

mean duration = 3.8 minutes

Does Not Cluster

Ororgrande, NM	11-04-57	8.97	13.29	-3.32	2	2	1
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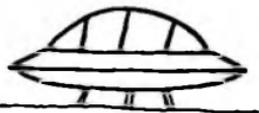


November 23, 1957

TONOPAH, NV

CLUSTER 5

Hynek UFO Report, p. 185

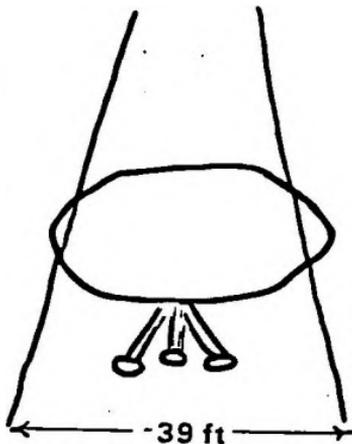


28 ft

January 7, 1974

WARNETON, BE

CLUSTER 3



39 ft

March 21, 1974

VALDEHIJADEROS, ES

FSR, 20 (5), p.6

CLUSTER 5

Ballester Olmos, Catalogue, p. 64

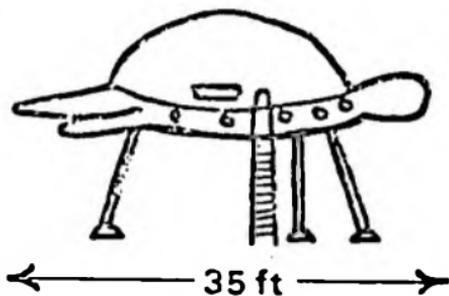


August 23, 1971

NUEZ, ES

CLUSTER 6

Ballester Olmos ?

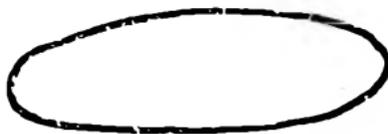


October 16, 1957

SAO FRANCISCO DE SALES, BR

CLUSTER 6

Bowen, Humanoids, 2nd Ed., p. 232



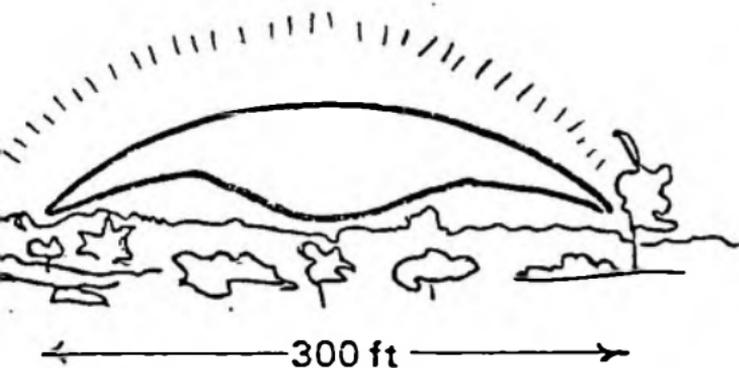
← 200 ft →

November 3, 1957

LEVELLAND, TX

CLUSTER 7

CUFOS Bulletin, Spring 1981, p.9



November 2, 1968

VILLAREAL DEL EBRO, ES

CLUSTER 7

Ballester Olmos, Catalogue, p. 57

The last remaining cluster, Cluster 7, can be characterized most easily by size. It consists of very large objects, averaging around 300 feet (90 meters) in length. They are also typically at an appreciable distance, averaging 436 feet or 132 meters. They are usually silent and are not associated with landings with physical traces. The encounters last for an average period of time (3.8 minutes).

The differences between the clusters can be shown graphically by a plot of the size and duration values (Figure 4). The values plotted are the unstandardized log values, so the clusters may be slightly distorted from how they would have appeared in the computer, but the general picture is the same. The line plotted across the lower left portion of the graph is the demarcation line between complete and incomplete ignition interference effects, as predicted by the discriminant analysis, for a maximum distance of 214 feet. Any report to the upper right of the line should result in a complete car stoppage. Any case falling below and to the left of the line should have experienced incomplete ignition interference, depending on how close the UFO was to the car.

The only case that defies classification is the Orogrande, N.M., report which occurred on November 4, 1957. The object is reported at such an extreme distance and appears for such a brief duration that it is difficult to find any support for the claim of an ignition failure related to the appearance of a UFO. The fact that the case is an extreme outlier in both the discriminant analysis and the cluster analysis should cast doubt on the accuracy of the testimony. Perhaps all the resulting publicity from the famous Level-land, Tex., reports, which occurred only the day before, influenced the eyewitness testimony of the observer.

Differences between the clusters were looked for on the basis of position of the UFO, whether or not the object was disk-shaped, the presence or absence of light beams, landings, noise, and physiological effects, in addition to the ignition interference effect and the presence of occupants. Because of the *a posteriori* nature of these tests, the criterion level for the significance tests was set conservatively at

alpha equals .01 to avoid capitalizing on chance association. At this criterion level, none of the other tests achieved significance. However, two were marginal and they are reported here for the benefit of those interested in future research. The Chi-square test for position of UFO by cluster achieved a significance level of  $p=.045$  ( $\chi^2_6 = 12.86$ ), and the test for the presence or absence of reported landings achieved a significance level of  $p=.028$  ( $\chi^2_6 = 14.15$ ).

### Discussion

The first thing that should be said about the discriminant function analysis results is that while the predictive ability appears impressive on first glance, its importance is diminished by a weakness in the data. Apart from the fact that it relies upon estimates of size, distance, and duration to make its prediction (which is always a risky proposition), a problem lies in the unbalanced size of the two groups. There are many more complete car stoppage reports than incomplete car stoppage reports. If we knew nothing about size, distance, and duration, but simply predicted that all encounters would result in complete car stoppages, we would be right 63 out of 76 times, or 81% of the time. Therefore, our prediction rate of 86% from the discriminant function analysis might be said to represent only a 5% improvement over adopting a simple decision rule based on observing which intensity of effect is most likely.

On the other hand, it does represent an improvement, which is always a step in the right direction. One cannot expect to have no noise in the system and a perfect prediction should not be expected. The very high significance level for the predictor variables indicates that something important is going on.

This baseline rate problem could best be remedied by including in future analysis reports involving UFOs with witnesses in automobiles where no ignition interference is noted. These reports could either be included with Group 1 or left to form a separate group for a three-group discriminant function problem. The only problem with this solution is that it assumes that "no-EM" cases are similar to "EM" cases. It assumes

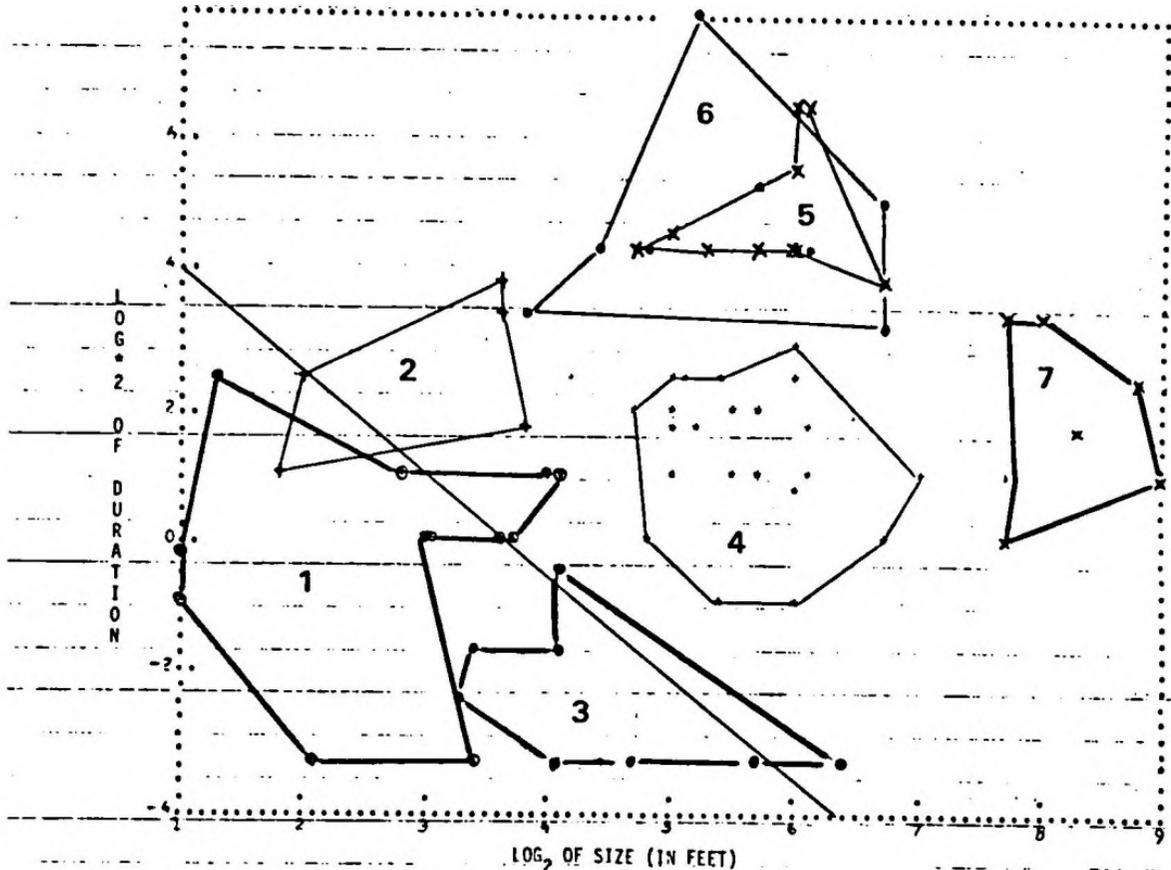


Figure 4: Plot of Clusters by Size and Duration

SIZE VERSUS DURATION 71 VALUES

that they are identical phenomena and that the mechanism involved in producing the interference effect was the result of some kind of propulsion system necessary for the operation of the UFO (and if UFOs are machines), then such a solution to the analysis problem would work well. However, if the interference effect is transitory in nature or only applied selectively, then the addition of reports of another variety would only confuse matters.

The second point to be made is that by demonstrating a connection between our three physical parameters and intensity of ignition interference, we have by no means proved that a physical basis for the connection exists. There are other possible explanations for the connection.

One possibility is that the operator of the motor vehicle is responsible for the vehicle malfunction, due to his or her emotional state at the time of the UFO sighting. It could be argued that proximity to the UFO would be related to degree of panic. As a general rule, big things occurring in nature get more respect and notice than small things, so size could play a role in the witness's reaction. Duration would be related to how much time passes before the thing leaves. If it departs within a short while (less than 30 seconds), then the driver may have time to recover from his or her momentary distraction and attend to the proper operation of the vehicle.

This explanation may work fine for some of the cases, but it has difficulty explaining those incidents where the witnesses were not able to restart their cars during the long (greater than 30 minutes) encounters, and yet had no trouble starting as soon as the UFO left.

One theory inconsistent with these results is attribution of the ignition failure to mundane natural causes. It is difficult to see how damp weather (Sharp, 1977), sand, dust, or vapor lock (Menzel & Boyd, 1963), or any of the other various natural causes for automobile failure could lead to anything but a random relationship between size, distance, and duration, and the intensity of the ignition interference response.

The fact that position of UFO did not prove to be a significant predictor when considered in conjunction with the other variables is interesting. Apparently the correlation between position and severity of effect found earlier (Johnson, 1983) was an artifact of the variable's correlation with distance ( $r = -.24$ ,  $p = .017$ ), and size ( $r = .22$ ,  $p = .028$ ). On the other hand, the results of the cluster analysis seem to indicate a continued role for the position variable. The fact that none of the Cluster 3 reports occurred with the UFO on the road in front of the vehicle, but all but one of the Cluster 6 reports did, suggests that position may be an indication of intentionality.

In the final analysis, we are left with results that are in accord with and lend credence to a theory linking the UFO and the interference effect by a physical mechanism such as McCampbell's high frequency electromagnetic energy hypotheses. Obviously, one thing that would greatly enhance the acceptability of such a hypothesis is to have the effect demonstrated in the laboratory. The direction of research funding to that area is therefore highly recommended.

DISCUSSION

?? What about object size as a factor in these effects?

R. Well, size was the second-most important variable; duration was the first and most important. If the duration of the event was very brief, the effect would not be that strong. It depends on what you want to look at. Size and distance are correlated positively, so smaller objects are seen closer and bigger objects are seen farther away. However, that may be a perceptual phenomenon and we can't isolate the confounding between the reliance that a witness makes on apparent size with his distance estimate and vice versa.

?? But is there no correlation at all with size of object and effects?

J. OK, I have some correlations here of size with certain qualitative variables. I agree that it correlates with physiological effects and has a slight correlation with noise, but it's not a good correlation. The noisy objects are the middle-sized objects. The big ones are silent; the little ones don't make very much noise. Distance is correlated with noise, so that's kind of nice--you'd expect things farther away not to be noisy. But physiological effect is not correlated with distance. It's not. Now the problem is in how we measure physiological effect, and we haven't really looked at the intensity of the effect as a variable. We have just been saying presence or absence.

?? How many cases did you look at?

J. Seventy-eight.

?? How many of these have physiological effects?

J. Twenty-seven.

?? How good are the cases?

J. Well, as to completeness of data, these are the best. Now in terms of the reliability of the witness, I didn't particularly use that as a criterion unless it was to rule out a hoax. One case I used was Kearney, Nebraska, which a lot of people condemned because the witness later said that he was in contact with an extra-terrestrial.

?? What were your criteria for cases?

J. OK, the criterion for inclusion was completeness of data, not whether I thought they were good cases from a subjective viewpoint.

?? I find it intriguing that you found a relationship between the intensity of the vehicle effect and the duration of the event, since in most cases the car stalled early in the event. Any comment?

J. I think the culpout is around thirty seconds; anything beyond that is sort of overkill. So the duration variable you're talking about is brief or very brief.

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# A SUMMARY OF VEHICLE INTERFERENCE REPORTS AND A DESCRIPTION OF A POSSIBLE NATURAL PHENOMENON CAUSING SOME EVENTS

MARK RODEGHIER

For over five years I have been gathering, sorting, and recording UFO cases involving vehicle interference. The catalogue that has been compiled as a result of this work contains 441 entries. I have chosen to include all types of vehicle interference cases in the catalogue, including those with only radio or headlight interference. I did not feel confident in not including the non-engine interference cases, because there is no reason to believe that their generating mechanism is intrinsically different from engine interference cases. We don't know how the "EM" (Electromagnetic) interference operates, so it becomes rather arbitrary to exclude certain cases. Of course, I necessarily limited myself to only reports involving interference with vehicles on the land to keep some standardization over the data.

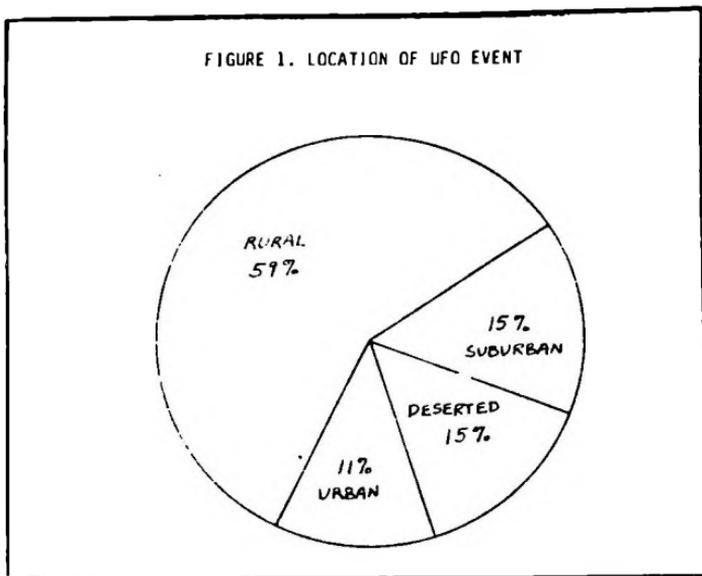
Any differences that may exist between my results and those of BUFORA or Donald Johnson might be explained by the type of event we have chosen to study. Thus, our results may not be directly comparable, but complementary.

Of interest to the reader would be the actual number of cases with different components of the vehicles affected. The results:

Engine and electrical system	208
Engine only	71
Radio only	69
Power reduced to engine	33
Headlights only	27
Radio and lights	14

There are even 20 to 25 cases where the engine of the vehicle, after it had ceased operating, started by itself without assistance from the driver. I am quite satisfied that such cases do exist, despite their problematical nature.

Approximately one-half of the events--or 217 cases--occurred in the United States, a figure which compares closely to other specialized catalogues such as Ted Phillip's Physical Trace Catalogue. We will find that many other characteristics of vehicle interference events match those reported from previous studies. For example, figure 1



displays the general location of the witness to an EM event. The four categories are defined in the same manner as the U.S. government does in its census work. Note that 74% of all cases occurred in low-density population areas. This number, too, is typical of all UFO events. Yet, as we are all aware, there are far more cars in urban areas than rural. So perhaps this result for EM events should be considered surprising; at the least, it will demand some reasonable explanation in the future.

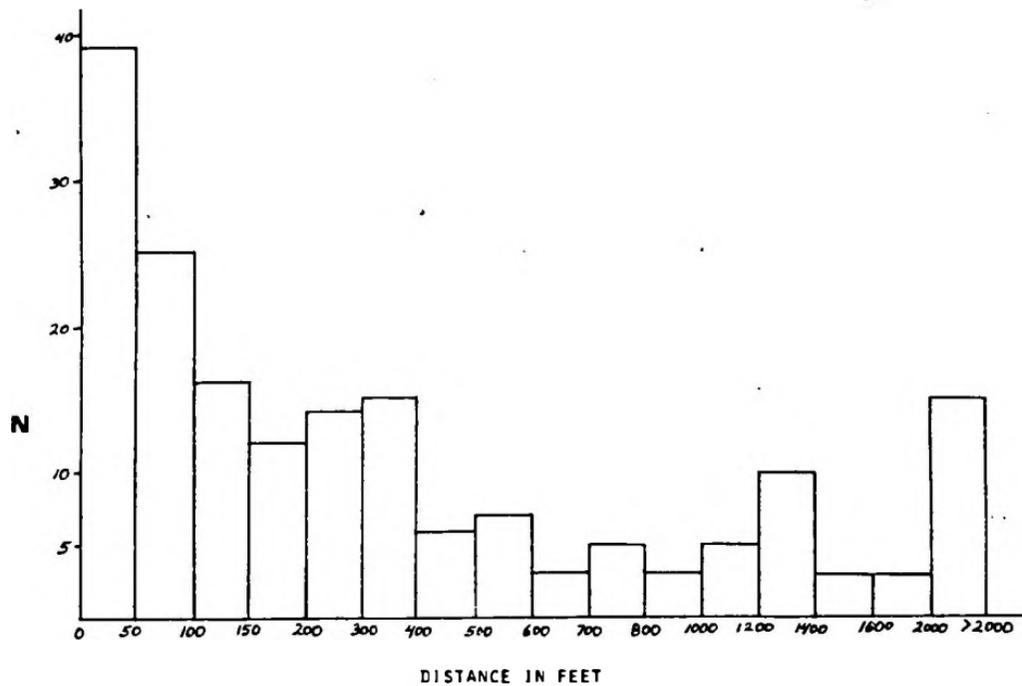
About 50% of all EM events were reported by only a single witness. This result also jibes with previous studies--but there may be more to be gleaned from it than that. The United States Department of Transportation reports that one-occupant trips constitute 50.2% of the total trips taken in passenger vehicles in the U.S., or to put it another way, half the cars on the road have only one person inside. The fact that the UFO witness data coincide with government highway figures may then be telling us very little about UFOs but simply confirming the government statistics. Or, more usefully, it probably means that witnesses to EM events are not "selected" because they are alone; in fact,

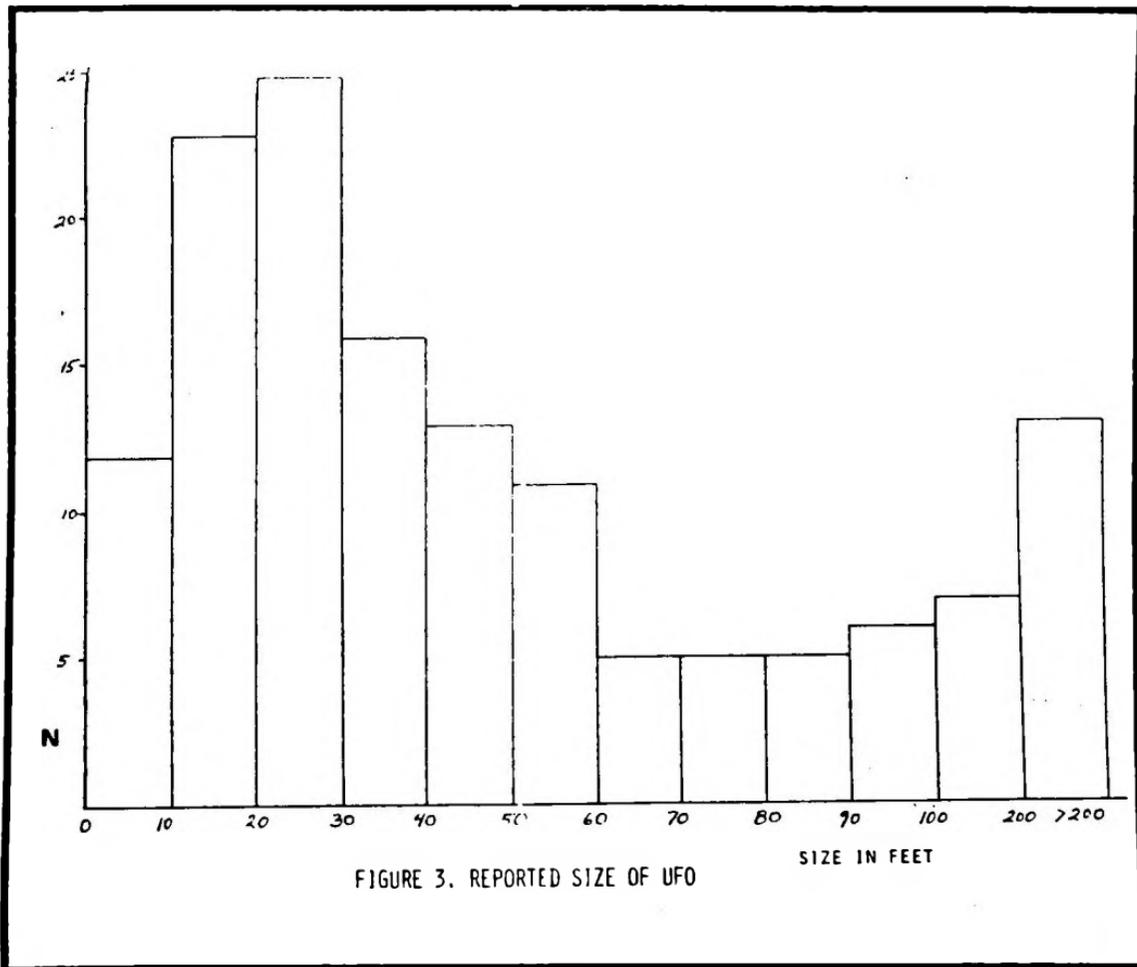
it would have been surprising only if these two percentages did not coincide. The question that comes to mind is why other types of UFO cases have the 50% single witness, 50% multiple witness distribution.

Figure 2 represents the reported or measured distance to the UFO from the vehicle. As is obvious, there are more instances of the UFO approaching within 0 to 50 feet (39 events) than that of any other distance interval. Fully 35% of all reports placed the UFO within 100 feet of the vehicle. Notice how the variation of reports with distance appears to follow some type of exponential curve.

Weather conditions during an event may be important if some or all UFO events have a natural explanation. Only 109 events in this catalogue included weather details. Of these, only seven cases occurred while precipitation was falling: 5 with rain and 2 with snow. There were no, repeat, no events during thunderstorms, making ball lightning an infeasible explanation for any event. Fifty-five percent of the cases occurred in clear weather, though, affording the witnesses good visibility when viewing the phenomenon.

FIGURE 2. REPORTED DISTANCE TO UFO





In Figure 3 we can see the reported size of the UFOs, in 10-foot intervals. In accord with studies by Vallee, Poner, and Phillips, among others, a definite peak in the 10 to 30-foot size range is reported. On the other hand, 9% of the reports estimate the size at over 200 feet, and one cannot believe all these estimates were greatly in error. This tremendous size range is just one more puzzle in the UFO phenomenon. One explanation is that there are separate and distinct causes for various types of EM events. We shall investigate that question shortly.

There were 98 separate events which involved some type of physiological effect on the witnesses, or 22.5% of all cases. These effects included such things as 29 cases of increased heat, 15 cases of static in the air or an odd tingling sensation of the skin, and 14 cases of unusual odors. However, no one effect occurs so often that it could be labeled a typical event characteristic. One possible inference from this fact is that each witness reacts in a unique manner to the energy released by the phenomenon. Another is that the phenomenon is not uniform, but, as mentioned above, is actually composed of and caused by several different mechanisms, each with its particular energy distribution and consequent effect on the witness. A third is that the phenomenon must be within a certain critical distance for any particular effect to occur, and thus the varied distances of the cases contribute to the variety of effects.

At close range, witnesses report that UFOs are rather noisy beasts; about 20% of the reports included some sound emitted by the UFO. There is good reason to believe that, as with physiological effect cases, in many instances sound was not heard only because the UFO was too distant. There is no one sound, though, that can be characterized as a common feature, except perhaps a "humming" noise like generators in a power plant, a sound which was reported in 8% of all vehicle interference events.

In Figure 4 we can briefly review the statistics for the yearly distribution of EM events. It is clear that this distribution is not random. The number of events in the 1966-79 period is greater than the number for the 1954-66 period by over 40%. This differ-

ence is greater than can be attributed to chance at the .01 level of significance. It might be attributed to an actual increase in events, or more frequent reporting by witnesses, or more UFO investigators, or more vehicles on the highway (which is certainly true), or many other possibilities. Consequently, the interpretation of these numbers in Figure 4 is rather difficult. But this increase does parallel that for all high-strangeness UFO cases, as determined from the Center for UFO Studies' UFOCAT computer file. Of course, noting that the data are comparable in no way explains why the data follow this or that distribution. This is another unsolved puzzle of the UFO phenomenon.

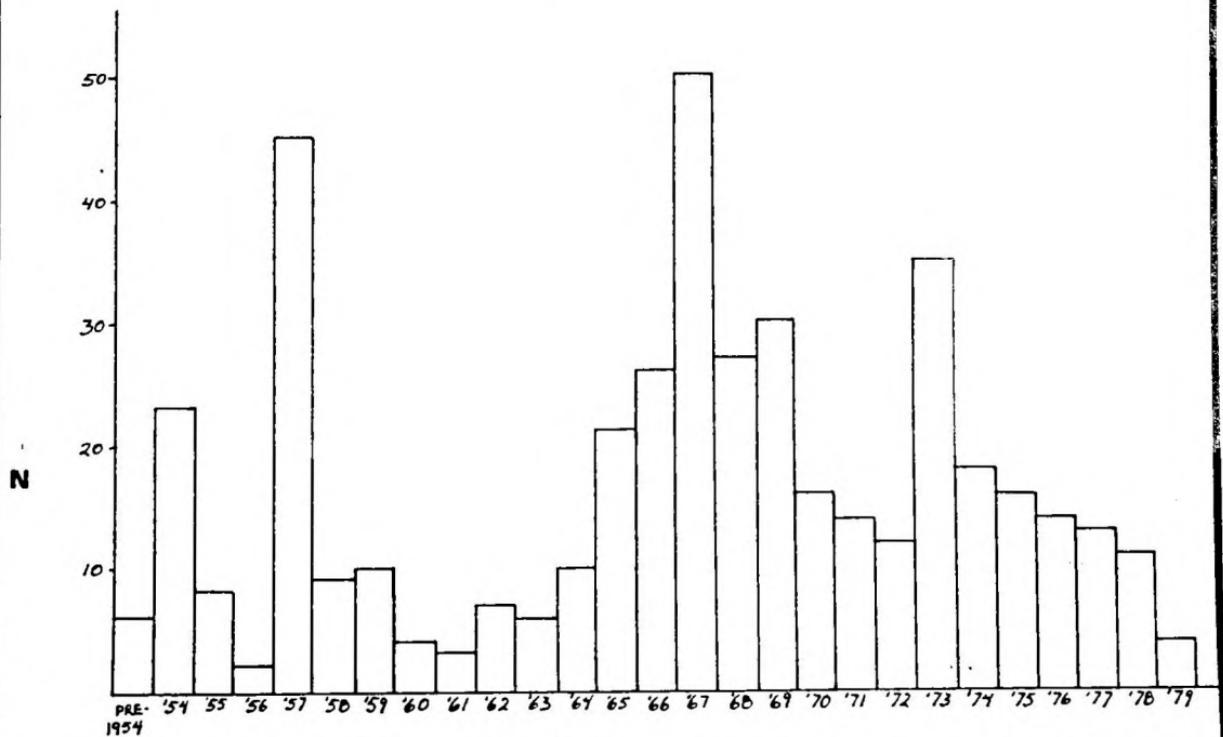
### The Witnesses

I don't believe--and I don't want anyone else to do so either--that the problem of the interpretation of UFO statistics is a hopeless quagmire, to be entered at our peril. Let's look at a statistic for witness involvement that I think can be explained in a mundane fashion, just as was done previously for the number of witnesses per event. I have determined from the catalogue that 70% the witnesses to vehicle interference events are male, 30% female. While these numbers make some initial sense, because we suspect that more men drive than do women, we must attempt some quantitative analysis to be sure.

By using the National Safety Council's publication Accident Facts, one can calculate the expected number of male and female drivers. The ratio of male to female drivers steadily declined over the period from 1962 to 1979, from about 5 to 1 down to 2 to 1. The average ratio was 3.5 to 1, or 78% of all drivers were male, 22% female. I should mention that these numbers are for actual miles driven, not just licensed drivers.

If we then extract the data on the sex of the driver of the vehicle for only U.S. and Canadian EM events, for this same time period, we can make a valid comparison. These numbers are: male drivers, 79%; female drivers, 21%. Given the uncertainties inherent in the calculation, the agreement is excellent. No selection factor for sex appears to be operating on the witnesses; that is,

FIGURE 4. NUMBER OF EVENTS BY YEAR



witnesses are chosen at random, as far as their sex is concerned. This is not unexpected, perhaps, but such a determination could not be made until data for actual numbers of drivers on the road was examined.

#### Time of Day

I would like to follow this same logic to study the variation of reports by hour of the day, local time, as presented in Figure 5. The pattern represented has been described by

Jacques Vallee as the Second Positive Law, or Law of the Times. Very few events are recorded during the daylight hours; the reports increase dramatically around 7:00 p.m. local time to a peak around 9:00 to 10:00 p.m., with a secondary peak at 3:00 a.m. This pattern has been found to exist for all types of UFO sightings in all areas of the world. Yet, isn't it curious that EM events follow this same pattern, since many more vehicles are on the road during the day than the evening or night?

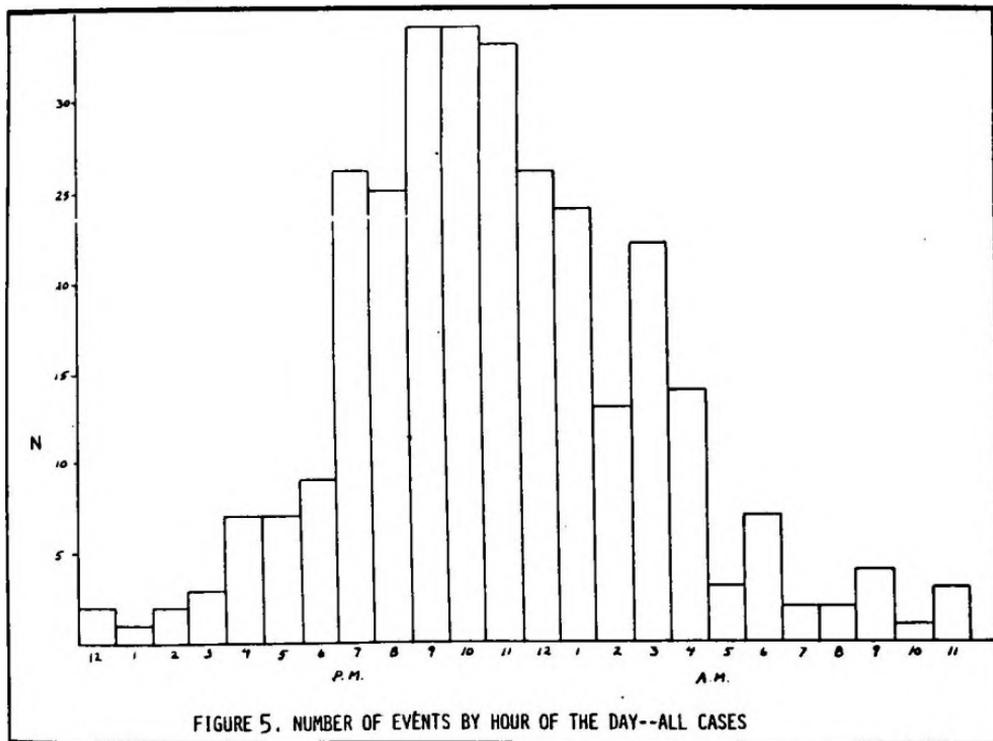


FIGURE 5. NUMBER OF EVENTS BY HOUR OF THE DAY--ALL CASES

To investigate the matter further, we extract only those events from Figure 5 that occurred in the United States or Canada. The result is displayed in Figure 6. With some minor differences, the pattern is similar to that from the previous figure for all EM events. To compare these numbers to the

number of vehicles on the road, we must first make a few assumptions. They are:

- 1) The chance of any one driver experiencing an event increases as the number of potential witnesses increases, and is directly proportional to this increase.

- 2) EM events are not directed by some intelligence in a non-random pattern at particular hours of the day.
- 3) The mechanism that generates an event operates whether or not a vehicle is present.

For those who believe that vehicle interference events--and for that matter, the UFO phenomenon itself--are due to an intelligence which selectively chooses vehicles with which to interfere, the last two assumptions may

not be tenable. The calculations we make will still have a meaning, but something different than if the assumptions are satisfied. If there is an intelligence behind the sightings, we would not have a random sample of sightings of EM-generating UFOs. Or perhaps, we may have only a partially directed sample, with some events occurring unintentionally, either due to carelessness or callousness on the part of the operators of the UFOs, or because some vehicle interference events are generated by more random natural phenomena.

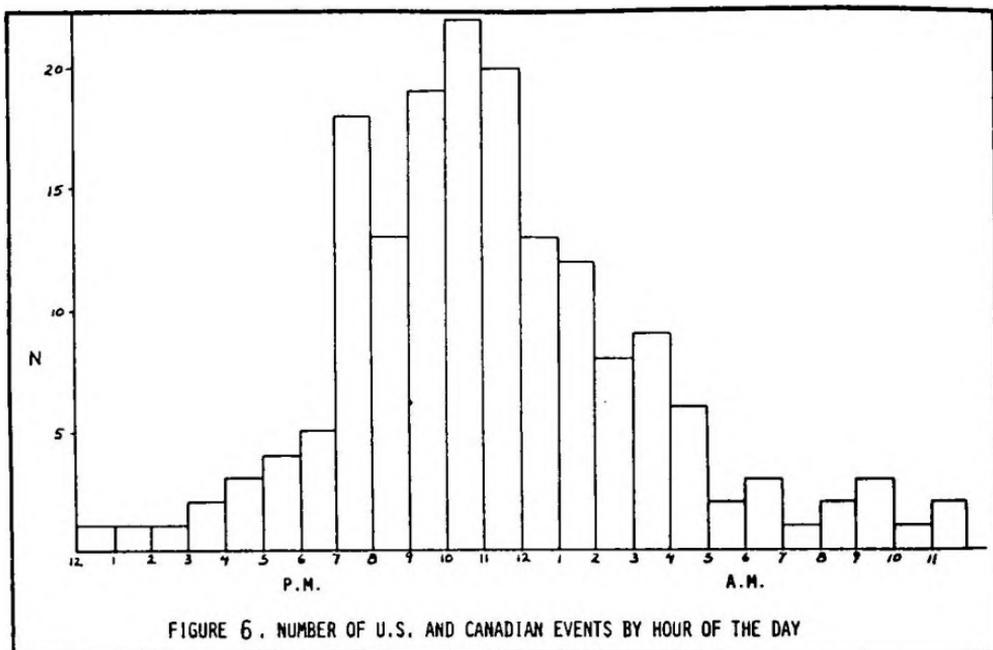


FIGURE 6. NUMBER OF U.S. AND CANADIAN EVENTS BY HOUR OF THE DAY

For the moment though, let's keep the three assumptions and proceed accordingly. By gathering data from various sources such as the Traffic Engineering Handbook and several U.S. government documents, the actual variation of traffic flow per hour of the day in the U.S. and Canada can be estimated. Care was taken to place more emphasis on rural traffic as more events occur in those

localities. The overall distribution derived from these sources is quite plausible and not surprising. I shall describe it since I have no figure. The 3:00 to 4:00 a.m. hour has the least volume of traffic, only 0.4% of the day's total. The 4:00 to 5:00 p.m. hour has the most, over 8%, closely followed by 5:00 to 6:00 p.m. There is a secondary peak around 7:00 to 9:00 a.m., with a smooth

variation of traffic between these high and low points (I was surprised that these numbers had to be calculated rather than just taken from previously available studies because such nationwide data has not been needed very often).

We can then adjust the data for reported number of CM events by hour of the day, with reference to these figures for actual traffic flow, in a straightforward numerical calculation. The result is depicted in Figure 7, and

is quite startling. While the highest frequencies remain in the 6:00 p.m. to 6:00 a.m. period, the peak time for sightings has shifted to 3:00 a.m. A period between 11:00 p.m. and 5:00 a.m. now contains the bulk of the frequencies of sightings. Of course, Figure 7 is a frequency diagram, due to the numerical adjustment that was made, not a diagram of the absolute number of sightings as in Figure 6. One can only compare these numbers internally, as one hour's relative weight to another.

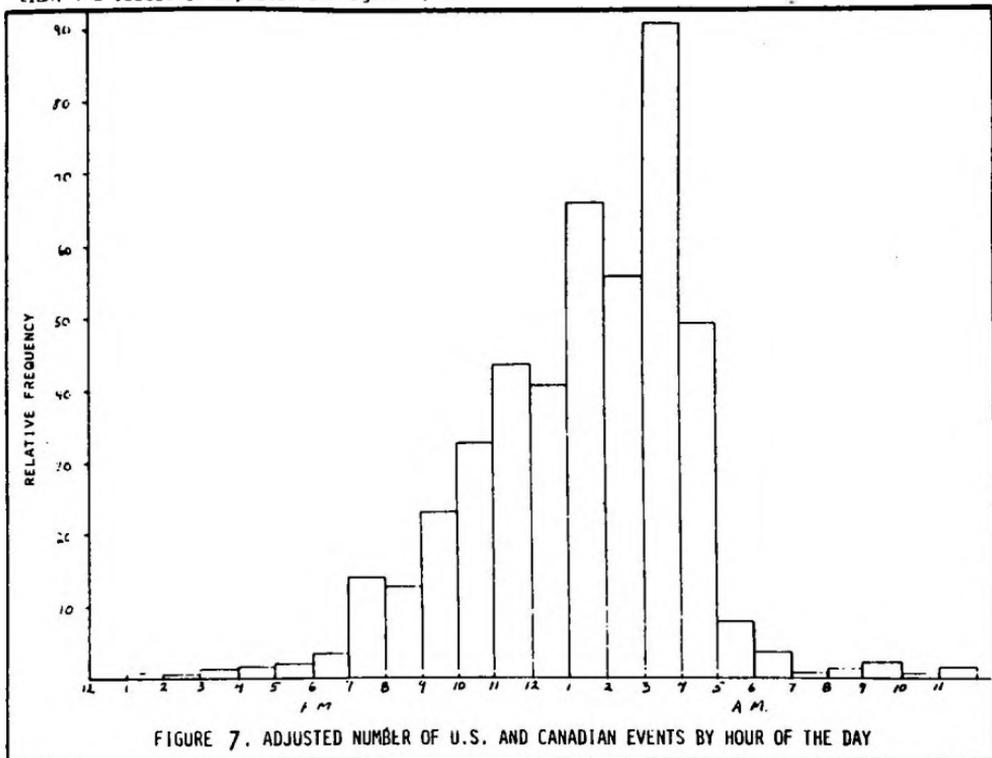


FIGURE 7. ADJUSTED NUMBER OF U.S. AND CANADIAN EVENTS BY HOUR OF THE DAY

That said, what sense can be made of this distribution? Well, if the three assumptions outlined above are satisfied, we can conclude that Figure 7 represents the relative frequency of occurrence of vehicle interference events in the U.S. and Canada by hour of the day. The UFO phenomenon, whatever it is, would thus occur 131 times more frequently at

3:00 a.m. than at 2:00 p.m. local time. This would be an important piece of evidence bearing on the nature of UFOs. For example, the hourly distribution of thunderstorms over the United States is highly skewed toward the late afternoon hours. This is a consequence of their method of formation, because the atmosphere must first be heated sufficiently

to cause enough uplifting to form clouds of the correct type and size for thunderstorms.

The fact, then, that EM events peak around 3:00 a.m. may be a clue to their driving mechanism. Michael Persinger has suggested that piezoelectric fields may be responsible for a majority of EM events; however, it does not seem plausible that such fields be preferentially formed in the hours between 11:00 p.m. and 5:00 a.m. Stress fractures and other similar tectonic events are caused by interactions between the earth, moon, and sun as well as complex internal geological mechanisms. My discussions with a geologist who specializes in this subject indicate that (1) there is no a priori reason to expect anything but a random distribution of piezoelectric events by hour of the day, and (2) that due to difficulties in measuring small-scale events, no good data exists on this distribution.

It is important to observe that if one believes that most EM events are directed by an intelligence with some hidden script, then figure 7 simply becomes the relative frequency or chance of any one driver experiencing an EM event by hour of the day. Figure 6, with the actual reported times for EM events, is then the relative frequency of occurrence of events, since the intelligence has chosen exactly when they were to occur. But if this intelligence inadvertently causes the events as a by-product of its other activities, then the last figure again becomes the relative frequency of occurrence of EM events, and therefore also the relative chance of any driver experiencing an EM event.

These estimates of vehicle interference event activity have great implications for our understanding of the UFO phenomenon. It is a much better estimate than that made by Vallee and Poner in their study of Type I cases. They used data for the number of people not at home, but that was a very crude estimate for the number of potential witnesses. I have instead restricted my sample to vehicles on the road and have gotten comparison figures on the same basis. If the catalogue is a good random sample of EM events, then figure 7 is telling us about something intrinsic to the UFO phenomenon.

### Pattern Analysis

I also made an investigation of the relations, if any, that might exist between these characteristics of a vehicle interference event: UFO sound, size, and color; presence of a light beam; type of UFO; and UFO activity (such as emitting a vapor trail). Chi-square tests were run on the resulting contingency tables to test the null hypothesis that the two particular characteristics in question acted independently or randomly. Prior to data analysis, it was decided that, if the null hypothesis was to be rejected, the chi-square value should fall within the .02 significance level. Since chi-square analysis is only two-dimensional, the results of this study can be presented on a plane. Figure 8 depicts the complete set of tests found to reject the null hypothesis of independence of the characteristics.

There are 35 separate statistically significant correlations that were located. It is fairly clear that certain characteristics sort themselves into recognizable groups after a few minutes study of figure 8. I have chosen to call these groupings "nexuses" because the action of the characteristics is intertwined. For the purposes of this paper, I would like to focus our attention upon the third nexus: UFOs that move in a straight trajectory, are small, and are reported as only a light, having no apparent structure. These UFOs are not metallic-appearing and tend not to emit sound or chase vehicles.

To give you an idea of the level of correlation of these categories, here are some examples: 10 out of 12 events with recorded size of light-like UFOs are in the 0 to 15-foot size range; only 6 out of 72 lights emitted sound; only 4 UFOs moving in a straight trajectory were observed to be metallic-appearing; and while only 9% of all sightings reported a straight trajectory for the UFO, 43% of all lights moved in such a path, easily significant at the .02 level.

However, this cluster of events might not appear too important upon first examination. In particular, Nexus III does not exhibit the same number of internal correlations as do the other two nexuses. But there are excellent a priori reasons to expect some cluster of characteristics like Nexus III to exist.

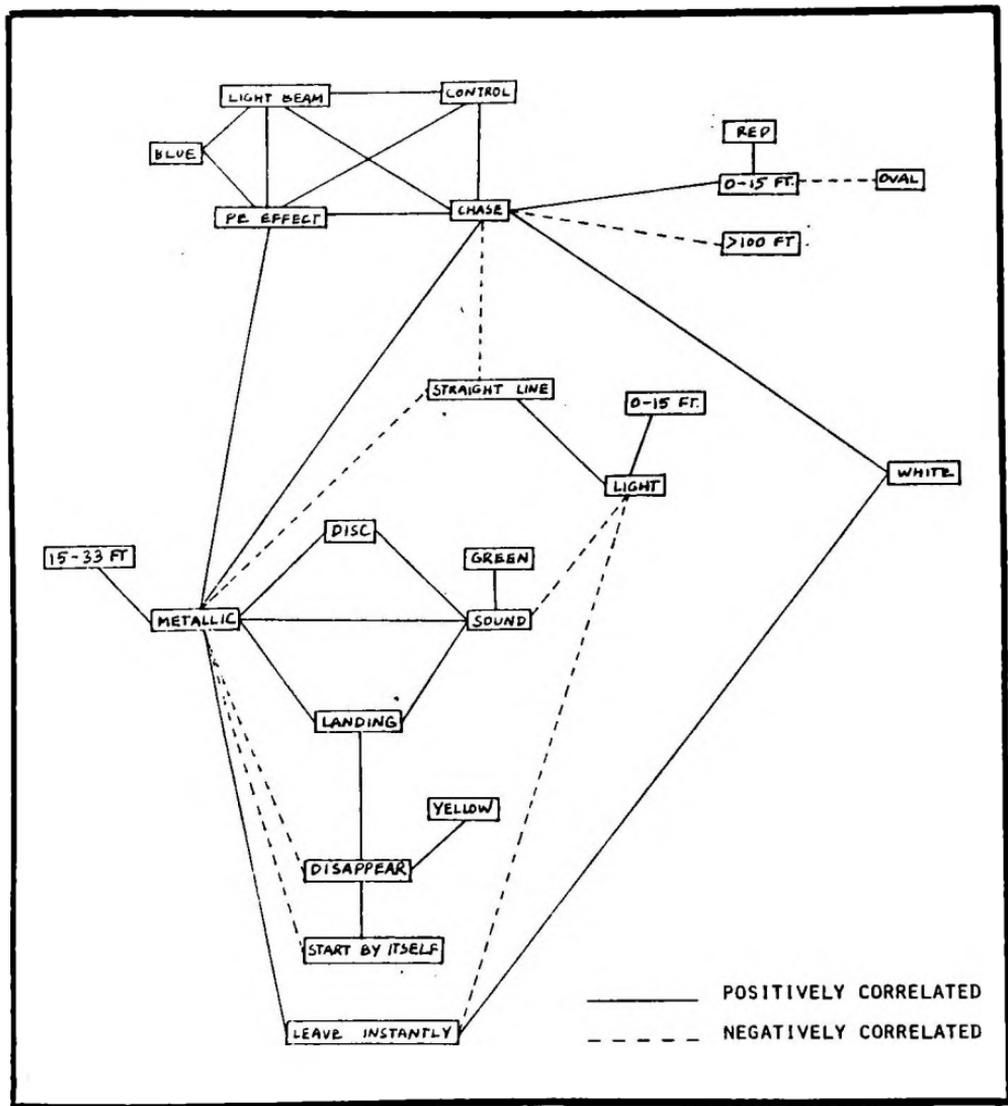


FIGURE 8. CORRELATIONS LOCATED BETWEEN EVENT CHARACTERISTICS OF UFO REPORTS INVOLVING VEHICLE INTERFERENCE

Philip Klass has speculated, in one of his books on this subject, that plasma effects might account for many UFO sightings. McDonald has shown that hypothesis to be incorrect in explaining a majority of sightings, but it is certainly plausible that it might explain a few.

Many investigators have advanced the idea that more than one mechanism will eventually be needed to explain the UFO phenomenon in toto. One of these mechanisms might be some type of natural phenomenon, as yet undiscovered. Workers such as Persinger and Forshufvud have speculated that UFOs are generated by, respectively, piezoelectric events, or electrical discharges in faults in the earth's crust. The energy source might be either quite localized electric discharges due to fracturing or stresses in quartz-bearing rock, or large earth currents flowing near the surface. In either case, these types of theories describe the action of plausible but ill-understood physical mechanisms to generate some vehicle interference events. It would, in fact, be surprising if there weren't at least a few EM events caused by some type of terrestrial phenomenon.

Given this pre-existent speculation on the subject, I submit that Nexus III appears to be describing this natural phenomenon. Nexus III may well be composed of the most salient characteristics of a UFO vehicle interference event generated by this phenomenon. To illustrate better the features of this nexus, I present here a summary of a few cases from this grouping.

Near Ottumwa, Iowa, U.S. August 24, 1978  
10:00 p.m.

While driving along the Des Moines River in a wooded rural area, a 54-year-old woman's 1972 Ford LTD suddenly stalled to a stop. Her headlights also ceased to function and the car's windshield steamed over. Then a red-orange ball of light appeared, moving from east to west across the river into the woods. It moved on a straight trajectory and made no sound. The woman could make no size or distance estimates, though she said the apparent size was that of the full moon. Her car could be restarted easily afterwards.

Here is a very early event from Aime Michel's work on the 1954 French UFO wave:

Near Gueugnon, France October 14, 1954  
About 7:30 p.m.

A reddish fireball passed over a car in a flash. As it did so, the engine and electrical systems both failed simultaneously. After a few seconds, the ball passed out of sight, the headlights came back on, and the engine could be restarted. The ball made no noise as it passed by the car.

Here is an event from my own files:

Heathfield, East Sussex, England  
November 10, 1972 11:00 p.m.

A young man, aged 19, was riding home on his Yamaha 250cc Twin motorcycle, when suddenly the headlights dimmed and went out. Almost immediately afterwards, the engine died and also failed. He got off the bike to check the engine, but smelled an "electrical arcing" odor. He then looked up and saw a white "blob" about 100 feet away hovering over some trees. It was about 60 feet high, glowing a whitish color but quite fuzzy in appearance. After a few seconds, it sped away in a straight line until obscured by some trees 400 yards away. Its average speed was about 100 mph during this motion. The witness estimated its size at 30 to 40 feet. The weather was clear and cool.

Or this interesting case:

McClain, Mississippi, U.S. December 3, 1980  
8:30 p.m.

Robert and Janice Lawrey, aged 25 and 19 respectively, were driving north on Highway 57 in a rural area when Janice saw a ball of light approaching their car from the east at eye level. It was 12 inches in diameter, self-luminous, and colored white with a blue tint in the center. It made no sound. The ball went over the car's hood and vanished rapidly to the west, not deviating from its trajectory. The whole event took about 10 seconds. Nothing happened to their 1977 Monte Carlo during the actual sighting, but immediately afterwards the heater stopped working, the FM radio stopped producing sound

except for "weak, multiple station" signals, the headlights dimmed so drastically that they could barely see two feet in front of the car, and the horn stopped working. Yet the engine remained unaffected. After they had arrived at their destination and waited about 30 minutes, everything on the vehicle functioned normally. No similar problems have occurred since the event and the car has needed no special attention.

Or this last case from the CUFOs files:

East of Barnum, Minnesota, U.S.

October 6, 1979

9:30 p.m.

A couple in their sixties were driving a 1973 Buick Riviera when they saw a ball of light coming low over some trees. It was 3 to 6 feet in diameter and it rolled and bounced over the top of the car in about 10 seconds. After driving another 500 feet, the car's engine died and the headlights malfunctioned. The battery was eventually discovered to be dead, so much so that it couldn't be jump-started. The alternator also wasn't functioning properly and had to be replaced. The mechanic who did the work told the couple that the car's interior looked like it had been through a fire, but not its exterior. The ball of light, of course, made no sound as it passed by the vehicle on its destructive path.

As indicated by the examples just discussed, the cases are diverse in their effect on the vehicle and the witness. Yet there is some consistency: movement in a straight trajectory, appearance as only a light, non-emission of sound, and generally small size (under about 15 feet). Fourteen events may seem like a small number, but I chose only those cases with movement in a straight trajectory for this nexus and for correlation purposes because such a trajectory can be easily observed by the witness. Ambiguities could therefore be avoided, an impossibility when dealing with complicated UFO movements such as right-angle turns or elliptical paths. However, there is no reason to limit this nexus to strictly those cases with a straight trajectory. They are simply the most easily recognized. To wit:

Near Aberdeen, Washington, U.S.A., on January 3, 1971, a man driving a 1964 Oldsmobile station wagon saw three fuzzy

"objects," about two feet in diameter, hovering over a bridge which spanned the Wynoochee River. The objects were not really structured or metallic-appearing, but were intensely luminous and fuzzy at their edges. They did not stay in any formation as they slowly drifted down the river, but changed position fluidly for the 45 seconds they were in view. As the witnesses' car approached the bridge, the engine just stopped, but the headlights, radio, and heater continued to function. After the three lights had vanished, the engine could be restarted. As usual in these cases, the lights emitted no sound; the weather was clear and cold.

In this case, the objects did not move in a straight trajectory, but their appearance was characteristic of Nexus III. Some other parameters that describe these events:

Location: 6 out of 7 events in rural areas

Weather: 6 out of 8 in cool or cold weather, with 5 in clear weather

Duration: 9 out of 10 lasted less than 45 seconds, compared to a typical duration of 3 to 10 minutes for other EM events

Shape: 9 out of 10 globular or spherical

Velocity: Steady and usually under 100 mph (or 40 meters/sec)

Interestingly enough, the make of vehicle affected has been distributed among the major manufacturers fairly well: Ford - 2, Dodge - 1, Yamaha - 1, Oldsmobile - 1, Buick - 1, and Chevrolet - 1.

I would like to suggest that these small, silent lights moving in straight trajectories and interfering with electrical equipment and engines have no precedent in the literature of meteorology or atmospheric physics. I would also like to suggest that they are the manifestation of some natural phenomenon, generating mechanism unknown. They surely do not appear as or act like extraterrestrial spacecraft or structured craft of any type. No intelligence controls their actions. They are in appearance akin to ball lightning, but in action and effect quite dissimilar.

If the thesis of this paper can be accepted, I would like to challenge those of us in the UFO community with the necessary training and interest to undertake studies with the object of developing a theory adequate to generate such a phenomenon, a theory which predicts the event characteristics I have enumerated for Nexus III.

- ?? There seems to be a significant difference in the number of cases your sample showed taking place after midnight versus the sample that Don Johnson had. Were there any particular characteristics that correlate with those cases that occur after midnight that would put them outside the cases that he had?
- R. Let me answer first, then Don can answer after that. Because I didn't have access to a computer and had only a limited amount of time for data analysis, I didn't look at all the characteristics that I might have wanted to look at. And so in terms of time of day of the event, I looked at only a few other things in juxtaposition with that, such as the location of the event. And I found that the location is randomly distributed amongst the hour of the day. Also, in terms of witness involvement, that it's the number of witnesses per case, the sex of the witness and the age of the witness which are also randomly distributed by hour of day. Beyond that I didn't look into it.
- J. The majority of my cases occurred between 9 pm and 4 am. The two cases on which we both agree occurred in the daytime. The other occurred at sunset, around 8 or 9 p.m. I remember that it was because of thunderstorms and that it had just stopped raining.
- R. I can comment further on that, in that there are a few events in this nexus three where the weather was changing. I can think of one in particular where the temperature had dropped 25 degrees in the last hour. The fact that most of these events occurred in clear and cool weather I think does definitely have some bearing on this. What I didn't mention also was the time that these 14 events occurred, and they did not occur at three and two in the morning. They did not occur during the day either. Most of them occur between the hours of seven and eleven at night.
- ?? Of the cases where the car seemed to start itself, you said they were a little iffy. Is the iffy part whether the car seemed to start itself? And the second question is that I am hoping that you will discuss nexus one and two also.
- R. In the catalog and study that is going to be published by the Center [UFO Reports Involving Vehicle Interference] I do discuss it. If we have time later I can talk about it. In answer to your first question, the iffy part of those cases is whether the engine actually stopped. I was talking to Don about that this morning, and you have to be very careful [what you accept] and I think it depends a lot upon which investigator did the case. If it's a Raymond Fowler investigation, you know, we all have a lot more confidence in it than if it's something from a foreign journal.
- ?? Have you ever had any reports with interference with a diesel engine or a steam locomotive?
- J. I find it rather interesting that there are two rather famous and well-attested cases--one in Great Britain and one in Italy where you had a comparison between two kinds of tractors. You had a diesel tractor and a standard gasoline tractor. The standard gas tractor stalled. In Great Britain you had a van-truck and a Jaguar sports car. The sports car stalled; the truck didn't. So I thought we were on to something here. There was a Kansas report [R. The UFO went over very closely overhead in that case.] So we seem to be on to something in terms of UFOs being unable to affect diesel engines. But then this case came from Spain; from Valdehijaderos, Salamanca, on 21 March 1974. As Ballester Olmos has suggested, there may be something about the mechanics of the vehicle that makes it a special case.
- ?? What is the possibility of developing a network of detectors? You could suggest a maximum power or sensitivity that would exclude thunderstorms or natural phenomena. How would you be able to differentiate between them?

- R. Well, let me answer just in terms of the possible detection of events. We really still don't know just how these events occur, and what types of electric or magnetic fields and what frequencies or pulsations that may have occurred in the presence of a vehicle that caused these events. Don mentions the Condon study where [in an experiment] of up to 20,000 gauss they found no effect on the components of a vehicle's engine. And there have been a few cases where the magnetic signatures have been taken of a car's body after the E.M. event and in which no variation was found in the magnetic signature, which means that it had not been subjected to an intense magnetic field. I really haven't looked into the question very much, of what type of field might be causing the effect. I wanted to do this kind of work first. I really don't think that at this stage of the game that would be a fruitful way to go--to get up a network of detectors like that, because I'm not sure what we're looking for, to tell you the truth. And I'm not sure what kind of field it would need to affect a car. I can mention one event that I do refer to in the report (though I didn't here) which I received from a high school science teacher in Texas. He and a few students were driving to football game in the afternoon during an intense rainstorm with what he assured me is a very well-tuned car (he used to be an auto mechanic). They learned during the rainstorm that the football game had been cancelled because of the rain, so they went to turn around, and as they were turning on a four-lane road, a lightning bolt hit the ground about 150-200 feet from their car, and the car died completely, it could not be restarted (the headlights went out also) for about 30 seconds after the lightning bolt struck the ground. So there's an event which might give us some indication of what might be necessary to stop a car. We know what kind of Milliken fields were around strikes of lightning. But as Don said when he concluded his talk, what we really need first are laboratory studies--large-scale testing or real cars--which has never happened (tests like placing a car in intense fields to see what happens, so that if we get an idea that actually a car can be affected by particular kinds of fields, then you can put your detector out.
- ?? Was there any screening done on those cases you have studied to eliminate any of the possible activities preceding the event that would tend to reduce credibility?
- R. Well, number one I looked for data completeness for the events. Number two, no, I tried to get the best events that were available. I tried to get accounts that were reliable; if the event had two lines in some small publication from overseas, let's say, I didn't use it for this kind of analysis.
- ?? Well it seems a person should be suspicious of reports of UFOs given by people who are driving at that time of night, or who are under the influence of something--that the account is something they made up, and the report is thereby somewhat less credible.
- R. Well, there is always that problem. I will say that I can't remember one case in the catalog (and Don and I each found that these were rare) where the witness was reported by any of the authorities to be drunk or under the influence of anything.
- ?? What about the people out in the wee hours of the night?
- J. A number of the witnesses are people who are engaged in work that would take them out at four in the morning. Then there are the people who are returning from dates. One incident at Lake Elsinore, California was dismissed by the Condon Committee because the witness is a diabetic on medication, and he'd also had a drink, so they dismissed it.

- ?? Well, they can also have a magnetic interpretation. I remember one report from a prospector who happened to have his truck along, and he happened to observe a disk-shaped object. His compass began spinning while he was watching it, and somehow the magnetic field...
- R. Well, there's also Poyer's work, which he published in FSR, amongst other places--it would be the magnetic recording station at Chambone le Fort, I believe. And [the events correlated] with distance, with the variations of the magnetic field from that recorder, so there is some indication that something really physical is going on here--both, I think (and I think Don would agree) in the cluster of events that may be due to natural phenomena and in the cluster of events that look more like some type of craft.

# THE INVESTIGATION OF ABDUCTION REPORTS

BUDD HOPKINS

In the 1940s, when the UFO phenomenon first began to imprint itself upon the public consciousness, no one was quite prepared to deal with it. Nearly everyone preferred things as they had been before, since this new mystery only complicated matters. A very human reaction was to try to sweep it away--out of sight, out of mind. Eventually theorists like Menzel (optical illusions) and Klass (luminous plasmas) attempted to return things to the status quo ante. As we know, the large numbers of close encounters, radar reports, photographs and ground trace cases simply eluded their narrow explanations. Rather than whistling in the dark, they appeared to be shining their theoretical pocket flashlights around while proclaiming that the dark no longer existed. The uneasiness behind their conservative attempts is all too obvious, and all too psychologically understandable. Aside from a few cultists and contactees, who wants to live with such an open-ended mystery?

The past decade brought a new dimension to the UFO problem: the unfolding of abduction reports in ever-increasing numbers. If we, as a people, had been unnerved by run-of-the-mill UFO sightings, our collective reaction to this development was even more dramatic. Conservative theorists like Menzel and Klass were now joined by more open-minded UFO investigators who could accept UFO reports as an arms-length phenomenon, but who were appalled by the kind of unwelcome closeness the abduction reports implied. The historical pattern, to no one's surprise, repeated itself. Hilary Evans, who

feels that there "is a real basis for . . . UFO reports, and that they relate to an actual phenomenon outside anything classified by science," discounts abduction accounts as Jungian archetypal fantasies. Veteran UFO investigator Al Lawson has constructed an elaborate theory involving inter-uterine memories dating back to conception to explain abduction accounts. Many other investigators simply refuse to consider these reports at all.

Again, the psychological need behind these theories and evasions is all too obvious. Who wants this sort of thing--the abduction of human beings, some of whom are children--to be true? Which of us is not deeply disturbed by this kind of report? And of course, as in the earlier situations, all this (neo-Jungian) theorizing ends up bypassing the real problem.

The central issue in these cases, the mystery which must be explained, is the pattern of circumstances which led us to suspect an abduction in the first place. Over and over again we uncover the same events: a family of five, driving in a deserted area at night, has a UFO sighting. The car stops, then restarts. The family drives home, arriving two hours later than they should. Each family member bears a similar mark or incision; each experiences subsequent nightmares and other attendant signs of a buried trauma. What happened to them?

In a recent California incident (the Melvin and Naomi case investigated by Howard Ford), a retired aeronautical engineer and his

wife sat down to have lunch in their home. Two days later their consciousness returned. After a period of simultaneous hallucination and psychosis, they were hospitalized. Each had highly specific, symmetrical wounds; the photograph of Melvin's large open wound in the region of the coccyx is ghastly to behold. Their hallucinatory imagery contains classic UFO abduction elements, and this theory stands as the only satisfactory explanation so far for their major injuries, physical marks, simultaneous amnesia, and so forth. What happened to them? In case after case, these are the mysteries; these are the problems which must be addressed.

Hypnosis is not the issue, since so many witnesses spontaneously recall the same abduction narrative as those whose recollection has been aided by hypnosis. Whether or not such things as prenatal memories exist is beside the point for UFO investigators. The mysteries to be examined are many and real: Where was Travis Walton during those five days? Where is Fred Valentich now? What caused Virginia Horton's disappearance at a family picnic and the spots of blood on her blouse when she reappeared? What caused the terror of Hickson and Parker? The wounds of Melvin and Naomi?

One can easily see that the basic abduction account which answers these questions is repellent, even unthinkable. It does not take a professional psychologist to understand why anyone might not prefer woolly-minded Jungian theorizing to the problems posed by these questions. Without intending it, Kenneth Arnold signaled the end of a kind of innocence for us, and it is only human now to long for the isolation of that earlier Eden.

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In the summer of 1976 I began an investigation into what turned out to be my first abduction case. In a casual conversation, a young woman who was baby-sitting for my three-year-old daughter told me about a UFO sighting she and two friends had made in the fall of 1973. While camping out one night behind a friend's house in Kent, Connecticut, they watched a series of ten or more lights moving one at a time down the side of Mt. Algo, above the trees and about a half mile away.

"But," she continued, "my older sister and her boyfriend were even closer. They told me the next morning that they had seen the lights coming out of a big UFO that was hovering on a mountainside a couple of miles away. They followed the lights in their car, and eventually lost them. But right at the foot of Mt. Algo they saw a whole group of strange hikers coming towards them, and eventually, they said, the hikers just disappeared. They could never figure out what happened."

The sequence of events, we learned, was as follows: Four young people, traveling in two cars, were returning after 10:00 p.m. on September 12, 1973, from a club meeting. The first car stopped on Route 7 to observe a 100'-150' UFO hovering below the crest of the mountain about a quarter of a mile away, and when the second car came along, it also stopped. A third car, having sighted the UFO from another higher vantage point, joined the others. Seven young people were now observing the UFO. One car drove off to a nearby cafe to pick up additional witnesses. The two new arrivals and the original seven all saw the small lights leave the large UFO and begin to travel away from it towards Mt. Algo. And so the three-car caravan started up, determined to follow the moving lights. (It is possible at this point, and in the light of later events, to make the inference that the young people were "being led.")

The three cars (minus the two frightened restaurateurs who asked to be deposited back at their cafe) drove to the foot of Mt. Algo where the moving lights had been seen to begin their descent. (This was the part of the sighting witnessed by my baby-sitter and her two friends.) But at this point the seven occupants of the cars lost sight of the lights, and so drove down a small back road. Their exploration yielded no results. They turned around and headed back to the foot of Mt. Algo where they encountered a fourth car, a white compact, parked. They stopped to inquire if the two women in this white car had seen the strange lights. From this moment on, their memories became less than clear.

Ted Bloecher, Jerry Stoehrer, Fred Dennis and myself, the investigators in the case, eventually talked to the six available members of the original group of seven. All attest that when they stopped to speak to the occu-

pants of the white car, they were approached by a double column of fifteen to thirty "hikers," as they referred to them, wearing lights, miner fashion, on their hats or helmets. It was their impression that the "hikers" walked by without speaking, and marched around the bend to the main road. Most mysterious of all, the witnesses agreed that when they started their cars and drove around the same bend, a mere thirty or forty yards away, the hikers had vanished, as had the white car!

In our interviews, the occupants of one car insisted they did not know what they did next, or when they went home. One of the young men from one of the other cars distinctly remembered looking at his watch during the chase after the moving lights; it was about 11:00 p.m. He recalled searching near the road for the vanished hikers, and then driving back to the place two miles away where they had first seen the large UFO discharging its lights. He was accompanied in this drive by his friends in one of the other cars. They remembered that as they parked and talked about the mysterious events they had just experienced, a police car stopped and asked them what they were doing, but they declined to tell the officer anything about the UFO.

"Why did the police car stop you?" I asked. "Because it was so late," the young man answered. "The cop asked what we were doing out here after two o'clock in the morning." It was only then that I realized there was a time problem--about two hours was completely unaccounted for. It suddenly dawned on me why the "hikers" had disappeared, and why no one saw the white car, which had been parked next to them, drive off. My guess was that two hours or so had elapsed between the approach of the figures and their "disappearance." Probably the white car, too, had departed during their shared hiatus, so both events were perceived as disappearances.

Though each of the six witnesses remembered seeing the hikers pass them by and march towards the bend in the road, none could describe the hikers from the rear, i.e., if they were wearing backpacks or something similar. One witness thought deeply about my question and said, "You know, I'm not sure I ever saw them from behind. It just seemed like they passed us by. I remember their approach, and what they looked like, but that's all I really remember."

The case is now, for many complex reasons, languishing in a kind of investigative limbo. A partial breakthrough in hypnosis by one of the witnesses established what I believe to be the beginning of an abduction scenario. The figures approached, stopped, formed a solid line facing the young people in their cars, and shone their headgear lights into their eyes. The witness, a Vietnam veteran, became intensely frightened as he described the mesmerizing effect of the light, and suddenly, spontaneously brought himself out of the trance. It was as if, in the words of Dr. Robert Naiman, the psychiatrist doing the hypnosis, the witness "was obeying orders." He has refused to undergo any further regression, as have some of the other witnesses.

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In my paper on abductions which I delivered at this summer's MUFON symposium, I classified abduction cases into five types. These are based upon what the witness recalls consciously, prior to any hypnosis.

Type 1. The abductee consciously recalls parts of the full abduction scenario: the on-board experience, the UFO, its occupants, its interior, and so on. (In a clearly related sub-group, the abductee's conscious recall of this material is delayed.)

Type 2. The abductee recalls the UFO, the circumstances of the encounter, and often the appearance of the occupants, but does not remember any of the actual on-board experience. That part registers only as a perceived gap in time. The Kent case is Type 2.

Type 3. The abductee recalls only a UFO and/or humanoids, but nothing else. He or she does not recall a time-lapse or dislocation. (This type may include a good many so-called bedroom visitations.)

Type 4. The abductee recalls only a peculiar time-lapse and/or dislocation. No UFO is consciously recalled, nor is any other part of the UFO abduction scenario.

Type 5. The abductee recalls nothing of the usual abduction scenario. Instead, there remain vague indications, ranging from the "feeling that something happened to me," to

intense, unnatural fears of specific locations or sections of highway, to physical wounds or marks of unknown origin, and including sometimes recurring dreams of a temporarily unanchored abduction experience.

This latter type, which I concentrate upon in my book, *Missing Time*, is, I believe, the most common. It also presents the greatest problems to an investigator. The description I have given undoubtedly covers many situations that turn out not to be actual abductions. How can an investigator know which reports to pursue and which to ignore, considering the precariousness of our resources and the limitations of available time? Hypnosis itself is an expensive and time-consuming operation, not to be lightly entered into.

I offer this suggestion: we should consider the quantitative weight of detail in each case; the more specific and suggestive details, the higher the priority, and vice versa. A recent pair of cases includes one in which a man in his thirties reported a vivid scar on his left thigh which he cannot explain. He remembered that it turned up when he was about fifteen years old. He awoke one morning, and on the way to the shower noticed a long straight gash which seemingly had bled very little and was presently painless. There was little if any blood on the bedclothes. He showed the wound to his mother who was very curious about it. She told him he had been screaming and crying in his sleep the previous night. He asked if she had gotten up to see what was the matter, and she answered that she had not. I asked him if he regarded her inaction as being at all strange, and he said that yes, absolutely, it had seemed strange at the time and it still seemed strange. (The witness now has children of his own.)

When I inquired about any previous or later odd encounters, he described a peculiar incident that occurred when he was about eighteen. In answer to another question of mine, he described a recurring nightmare which involved a kind of kidnapping experience. His scar, which is about three inches long, is still remarkably vivid even twenty years later. His feelings about its mysterious overnight origin are just as intense as they were when he awoke and discovered it. These details, taken together, make this case one I would vote to pursue, and if further investigation supports its veracity, I feel hypnosis should be used.

In contrast, I received a letter from a woman who read my book, scoured her body, and discovered a scar-like mark she had barely glimpsed before. She has been interested in UFOs for years and has read a great deal. She doesn't know how she got the "scar" nor do members of her family remember having seen it. She said she has lost a great deal of weight, but thinks the line is not a stretch mark. She has also had some vivid UFO dreams. This case, obviously, is not worth pursuing in any depth. The previous case, though, has about six or seven separate, yet mutually supporting, clues that take on cumulative weight.

When we consider potential Type 4 cases, I offer another pair. On a Denver call-in radio show, a woman reported a disturbing 1978 experience. She, her aunt, and two teen-age daughters were driving straight back to Denver from a family visit in Iowa. At some point in Nebraska they noticed a strange light or aura around their car. The woman asked one of her daughters if she saw what was happening. The girl answered that she didn't know what was causing it but, her mother told me, "her voice was funny, as if she was a little dazed."

The next thing any of them knew they were fifty miles the other side of Ft. Morgan, a town they did not remember having approached. All four were also quite frightened, without knowing exactly why. They have never driven back to Iowa, even though my caller said she had gone there to see her new-born grandchild.

A few of these details were elicited during the radio program, and others surfaced when I called the woman back after we were off the air. Two days later I called again, and reached the two girls who had been in the car at the time. Their mother was not home, and the daughters were only dimly aware that she had called in to report the experience. Each girl in turn confirmed their mother's account, and I was struck by the strong, lingering fear each attested to. The entire experience was confusing and frightening.

The older daughter is now nineteen. I asked if she had ever seen anything she thought was a UFO.

"I had a funny experience a few weeks ago," she said. "I was with some friends and somebody said, 'Look, a UFO.' It turned out to be an airplane and not a UFO, but I don't

understand my reaction. I felt this wave of panic, and for some reason I burst into tears. I just couldn't stop crying. I got down on the floor and started crawling around, trying to hide. My friends had to practically shake me to get me to stop."

The younger daughter, who is now fourteen, also has had some recurring fearful imagery, which suggests a buried trauma. It seems clear to me that a Type 4 abduction case lies behind these reactions.

By contrast, on another call-in radio program, the host told me that after reading my book he had recalled a "missing time" incident from 1977. He was in college at the time in Michigan. He, his girlfriend, and another couple were driving from one town to another. The trip should have taken a half hour. Attempting a shortcut, the young man made a left turn off the main road. He does not know what happened, but they found themselves driving back into the town they had left from, and an hour and a half had passed. He feels he knew the roads well, and cannot understand what could have gone wrong.

I asked if the incident bothered him, and if he ever thought about it. He answered no to both questions. I asked if he had ever dreamed about it, or for that matter, dreamed about UFOs in any way, and again the answer was no. I toyed with the idea of contacting one or another of his companions from that drive, but decided against it. Being lost on a back road late at night after a party seemed too easily plausible for me to bother with another long distance phone call. There was not one additional detail to add to the original perplexing incident, and the absence of any residual fear or even uneasiness seemed definitive.

I have offered these paired situations to suggest to other investigators the cumulative force of a number of significant details. It is a simple way to examine possibilities, and to decide upon one's priorities. I am not

suggesting that the two "negative" cases I have outlined should be absolutely ignored, because either could contain a heretofore hidden UFO experience; it is just that we now haven't time to spread our meager resources that thinly.

#### IV

Another issue I would like to raise involves hypnosis. When I have appeared on radio call-in programs, and there have been a number of these that my publisher has arranged, I deliberately do not dwell on the content of the abduction experience. Instead, I try to deal with various circumstances that might indicate a buried UFO experience, circumstances that I discussed earlier when I defined Type 4 and Type 5 abduction cases.

The result is that I frequently receive one or two calls per program, the Nebraska incident being a good example, dealing with these kinds of recollections. Once I investigate the case fully enough to feel that hypnosis should be attempted, I find myself in an ethical bind. On the one hand, I do not want the subject to have any information about what may surface, in order to keep recollection as uncontaminated as possible. On the other hand, I have seen people undergo devastating fear as they relived abduction experiences in a hypnotic trance. I have seen a grown man in this situation urinate involuntarily. I watched a New York City police officer, who had no idea he had had such an experience, slip into profound terror in the hypnotist's office.

I feel we have a moral obligation at the least to explain to a potential hypnotic subject that he or she may, if there is a buried UFO experience, go through a period of stress or even fear. Our responsibilities to these subjects outweighs, I feel, our desire to keep their expectations as neutral as possible. We are not just investigators. We must accept the fact that we are, whether we wish it or not, also involved in a process of healing the psychic scars these people bear.

## DISCUSSION

- ?? How much of the information that is obtained through hypnosis is subsequently verified by some kind of fact? This is always a great danger--evidence that is self-contained, as opposed to that which is subsequently verified.
- H. I think all reports have to be gone into on a case-by-case basis. It's very hard to answer this question. I give an example in the book: a teen-ager disappeared in the woods with her brother while playing at a family picnic. She was called by her parents and returned from the woods, and was told that they had been looking for her for an hour or hour and a half. She insisted she had been with her brother the whole time, but her brother said "I was looking for you!" Her father was filming everyone at the picnic, and as he swung the camera around when she came running up, her mother said "You have blood on your blouse!" And she looked down and saw it (and this is on the film). Unfortunately I haven't seen the film since there's only one copy, and it's out in Wisconsin and I am in New York. But I talked to her parents, who confirmed that there was, at any rate, drops of blood on her blouse. So we have confirmed that she was gone, physically gone, and that there was blood on her blouse, and that's all we knew at the time. Through hypnosis she has described an abduction experience in which a needle was inserted in her nostril as part of whatever was going on, and that her nose evidently bled little drops of blood onto her blouse. So we start with the physical circumstances as I'm describing in these cases, too, and then we find what hypnosis would come up with and whether the hypnotic content would somehow account for the circumstances--for missing hours and that sort of thing. And in most cases that I've dealt with, the hypnotic content--when we can get the people to undergo hypnosis--explains the missing time situation.
- ?? What did the Air Force officer who reported an object approaching and hovering ahead of his plane compare its size with?
- H. With a C-130A. He described it as a triangular pattern of lights but with a body within it which was glowing itself. He said it was very large. He didn't give me any real description except that the light was so powerful that it streamed through the windshield. He also, and this is just a little detail, said that the gasoline tanks of the cargo had been green when they went in to the cargo, but when they were unloaded he was convinced that they had turned grey. (I report that for what it's worth.)
- ?? I wondered if he had any repercussions from the Air Force for divulging the story?
- H. He had never divulged the story before this, and if anything has happened since he did, I'm not aware of it.
- ?? Is there any independent evidence to verify these cases?
- H. The Texas group, a MUFON group, who are investigating that case from 1979 told me that they are just subjecting a woman and her 18-month old child who evidently were abducted about a year ago to hypnosis. They said that the woman also had a probe placed up her nostril, and something seemed to be on the end of it when it was removed, but a probe was put into the child's nostril too--an 18-month old child! And they told me that, this weekend I believe, they are having both the woman and the child completely X-rayed from top to bottom for the reason.

# STANDARDS IN THE EVALUATION OF UFO REPORTS

VICENTE-JUAN BALLESTER OLMOS and MIGUEL GUASP

## Introduction

The authors have always been deeply interested in any development related to the standardization of methods to study the reported UFO anomalies. In fact, we are on record proposing some normalization of the analysis of the "Law of the Times" distribution curve (1).

Our own research methodology follows several basic steps: acquisition of data (emphasis is placed on the random generation of the raw material); screening of the observational input (study of cases and rejection of those for which a rational explanation may be ascribed); construction of an organized sampling or catalogue, which only displays unidentifiable phenomena; design of codification schemes for the automatized treatment of sighting reports; computer-aided analysis of data; usage of techniques of pattern-recognition; and physically oriented interpretation of results.

Within this investigative framework, we have frequently missed standard criteria to quantify the most representative parameters defining a typical UFO report, i.e., the volume and quality of available information, the strangeness level of the experience, and the reliability of the event. Motivated by this lack of criteria, we have managed to design a system for the mathematical evalua-

tion of these report characteristics, aimed at its adoption by the world-wide community of UFO researchers. At least we expect to raise enough discussion which should end in some general agreement on this point.

We will enunciate rational calculations that allow the self-assessment of one individual report or group of reports, by quantifying the magnitude of the three above-mentioned parameters. In order to reach this objective, we have strived to develop a non-subjective model. As a by-product, we will propose a final relationship to be established among those three variables, giving rise to a fourth index which assesses the certainty of a UFO event, as far as its validity is concerned (a true anomalous phenomenon occurred).

In the process of the original study, the authors' main concerns have been the review of the practicability of previous proposals, and the pursuit of a rigorous, stable model. This paper is shortened from a longer essay published in Spanish in a joint book of ours (2). The part we have omitted refers to the description and critique of the systems proposed by other researchers (3-8).

The reader will realize that this study has been built around the phenomenology of close encounters. The reason for this bias is our own specialization in the analysis of

landing reports (9-11), as well as the known fact that those cases are the ones that provide the highest quota of discrepancy with known phenomena and artifacts, and consequently deserve the researcher's deeper attention.

#### Quantification of the Informative Level Of a UFO Report

We define the UFO Information Quality Index (Q) as a value which indicates the strength that a certain descriptive story--a UFO observation--has for analysis, based on the set of data available. This index emerges as an objective measure of the amount of informative bits contained in a given UFO report, gained from both the examination of the primary source of the information and the extent of the existing documentation. Table I shows our proposal for the UFO information quality range. It has been designed in a way that Q varies between the threshold values of 0.0 and 1.0.

Table I quantifies the obvious fact that the probability of the accumulated data to be valid, and their completeness, vary according to the existence of elements degrading the information. In a scale of goodness, higher-level sources are direct (first-hand), medium-level sources are indirect (correspondence with the witnesses), and lower-level sources are the remaining others (questionnaires, newspapers, rumors, etc.).

"At the site" investigation comprises the one made on the spot where the sighting took place, with the witnesses' assistance, during which the interview is duly tape-recorded, and the common investigative procedures are displayed. Between the witness and the investigator there is no filter which may deform the sightings' contents. For this, the information so acquired is given the highest value, 1.0. If the inquiry time lasts less than 2 hours, its value is reduced to 0.9.

When the interview with the witness is not held in the UFO event's place, then the value of the resulting report is 0.4 or 0.8 if the duration of the inquiry is less than one hour. If the "person to person" interview is conducted by telephone, the value of the information obtained is 0.7 or 0.6, depending if the time invested in the conversation is more or less than half an hour.

The interval of Q shifts from 0.7 to 0.5 when the information proceeds from a witness questionnaire or a letter, provided some follow-up is made, in function of the extension of the information contained in such reports. When there is no follow-up at all, the data extracted from a typical UFO questionnaire receive the 0.6 value, and when the source of information is just a letter from the witness, the given values are 0.4 and 0.3, based on the length of the written report.

If the information comes merely from the press, by following the same coverage criterium, its qualitative values will be 0.2 and 0.1. When the source is the radio or TV, or if it is a witness' relative, the real value of the information is rated 0.1. Finally, a zero value is assigned to information coming from a verbal comment from a third party, from hearsay, or from an unknown source.

We believe that Table I provides a reliable and objective classification of the UFO information quality, according to the absolute weight of the input, and presents a definitive improvement with respect to other attempts."

#### Strangeness of the UFO Experience

By definition, factors involved in any formulation of the strangeness concept will be those which, by themselves, nullify the possibility that the observed phenomenon or object may be explained as a conventional-nature entity. The strangeness in a UFO report is the amount of elements that make it become a really weird event. In this context, weird or strange not only means that

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"Let's discuss an apparent problem with our proposed rating: A long investigation which has been misconducted versus a newspaper account which faithfully repeats the actual event's features. Does the occurrence of these possibilities demand a modification of the scheme? There are two main arguments to maintain the proposed structure. First, this hypothetical double situation is not frequent. Second, the UFO Information Quality Index corresponds to the amount of data at hand to be analyzed, and a long inquiry will always produce a higher volume of information to be studied than a typically limited newspaper report.

Table 1

Range of the UFO Information Quality Index (Q)

SOURCE	DIRECT INVESTIGATION	AT THE SITE	≥ 2 hours.....1.0
			< 2 hours.....0.9
		INTERVIEW PERSON TO PERSON	≥ 1 hour.....0.9
			< 1 hour.....0.8
		BY TELEPHONE	≥ 1/2 hour.....0.7
			< 1/2 hour.....0.6
	DIRECT INVESTIGATION	QUESTIONNAIRE WITH FOLLOW-UP	Extensive.....0.7
			Brief..... 0.6
		LETTER WITH FOLLOW-UP	Extensive.....0.6
			Brief.....0.5
	OTHERS	QUESTIONNAIRE	.....0.6
		LETTER/NARRATIVE	≥ 1 page.....0.4
< 1 page.....0.3			
NEWSPAPER		≥ 500 words.....0.2	
		< 500 words.....0.1	
RADIO/TV		.....0.1	
WITNESS RELATIVE	.....0.1		
VERBAL/RUMOR/UNKNOWN	.....0.0		

which mystifies the observer, but that which is inexplicable by itself, an anomaly to all known principles of nature and technology. We will follow Hynek's notation and  $\Sigma$  will be used to denote strangeness.

The error we have detected in the definitions given to strangeness by other researchers is that this is merely a measure of the complexity of an event. Accordingly, the values of strangeness are ordered from the simplest to the most sophisticated. For us, strangeness must qualify the abnormality of an event compared to normal processes, familiar phenomena, and known manufactured objects.

The factors we propose to give shape to the strangeness of any UFO report are the following, in the manner of an accumulative scale:

1. Anomalous appearance
2. Existence of anomalous movements
3. Apparition of physical-spatial incongruities
4. Technological detection
5. Close encounter
6. Presence of beings associated with the UFO
7. Finding of traces or production of effects

Each one of these factors gathers a number of parameters that will be described below.

1. The anomalous appearance will be the first clue for the researcher to doubt the normality of what has been observed. An apparently physical phenomenon will have such an anomalous aspect when its shape or dimensions do not correlate with any identifiable flying craft. Its shape may be that of disk, cigar, etc., or it can include in its description, for instance, lights for which intensity or situation immediately exclude other conventional lights to be sighted in the skies.

2. Anomalous movements are those dynamic characteristics of the observed phenomenon which make it impossible to receive a logical explanation, based on actual knowledge. Definition must include enormous horizontal or ascending speeds (higher than those of the fastest aircraft); enormous accelerations (idem), strange trajectories (mixed, broken, helycoidal, etc.); ascent or descent in the "dead leaf" fashion (as if no gravity

existed); and in general, any contradiction with the usual movements of aeronautical devices, astronomical bodies, birds, etc.

3. By physical-spatial incongruities we mean those elements which are in flagrant contradiction with the intuitive sense of the dimensions and the volumes (such as evident, well-observed apparitions and disappearances sur place, the merging of two objects into one, etc.), and/or what what seems to violate the known behavior of the physical entities (such as deformations of apparently material objects, "solid light" cases, etc.).

4. The technological detection refers to the observing and/or recording of the passage of the UFO through calibrated precision instruments (technical or scientific): radar or laser tracking, observation through telescope or theodolite, record in photograph, film or video tape, light spectrum analysis, audio recording, etc.

5. A close encounter occurs when the witness has enjoyed a privileged position, thanks to the proximity of the event, to observe in detail without the distortion of distance. Quantitatively, this factor should follow Hynek's range (i.e., within 500 feet or 150 meters).

6. By the presence of beings we mean the association of presumed occupants with objects that conform to at least some of the requirements of items 1, 2, and 3.

7. By traces and effects we mean those lasting physical or chemical characteristics or residues left by a UFO after its disappearance, provided that there exists some testimony that the traces or effects were produced by the presence of the UFO. These should include effects in people, effects of a mechanical nature, physical changes in inanimate bodies, and electromagnetic effects on motors, vehicles, or electric circuits.

Whenever there is one or more of the characteristics noted in the seven previous items, we state that said factor has a positive value, and will assign it one strangeness unit. The formula to express the Strangeness Index of a UFO report will then be

$$\Sigma = \frac{n}{7}$$

where  $n$  is the number of positive factors in the report. The range of  $\sum$  will be from 0.0 (no strangeness) to 1.0 (maximum strangeness level).

#### Credibility of a UFO event

After reviewing previous writings on this subject, and reflecting on the success or failure of such proposals, the authors attempt to provide below a formulation that in our judgment is more satisfactory. We have resolved the dilemma between the exhaustive or sophisticated and the practical or immediately useful by giving greater value to the second. After all, what is the advantage to quantifying a large score of details if, in the end, even the best reports provide only half of them? We think that it is much better to take into account those data which are both outstanding for this purpose and

easy to acquire, as otherwise our attempt would fail in practice due to excessive zeal.

In the computation of credibility, it is basically a person's affidavit which is measured, the weight of the witness factor being the most relevant consideration here. What we ask ourselves is if the witnesses have such characteristics, and to what extent, that let us believe their words. All the elements that provide evidence of their truthfulness and ability will be taken into consideration: dependability, intellectual level, interpersonal relationship, partnership versus loneliness in multiple witness cases, conditions for fabrication, maturity, etc. These are elements that can certainly be extracted from most investigations. We maintain that there are six elements which are the primary ones in any UFO sighting in regard to its reliability and they are expressed in Table II, in a decreasing order of importance.

Table II  
Components of the Reliability Index (77)

Number (n)	Element (E)	Relative value (i)
1	Number of witnesses	0.25
2	Profession/occupation of witness	0.20
3	Relation between witnesses	0.15
4	Geographic relation	0.15
5	Activity at the time of the sighting	0.15
6	Age of the witnesses	0.10
	TOTAL	1.00

The formula for the Reliability Index is

$$\pi = \sum_{n=1}^6 (E_n \times i_n)$$

or, expressed in a developed way,

$$\pi = (E_1 \times 0.25) + (E_2 \times 0.20) + (E_3 \times 0.15) + (E_4 \times 0.15) + (E_5 \times 0.15) + (E_6 \times 0.10)$$

The values that the successive elements  $E_n$  ( $n=1, \dots, 6$ ) can take are defined as follows:

$E_1$  - Number of witnesses (a sighting is more believable if it has more witnesses)

0.0 - none or unknown

0.3 - one

0.5 - two

0.7 - three to five; "several"

0.9 - six to ten

1.0 - more than ten

$E_2$  - Profession or occupation of the witnesses (indicates their level of job responsibility, from which can be inferred a measure of their dependability or social status)

0.0 - not specified

0.3 - students

0.5 - laborers, farmers, and housewives

0.6 - university students

0.7 - traders, businessmen, employees, and artists

0.9 - technicians, police, and pilots

1.0 - university graduates and military personnel

$E_3$  - Relation between witnesses (provides indication of the theoretical tendency to generate a hoax together, based on the different types of ties between them)

0.0 - unknown

0.3 - friends

0.6 - family relationship; also applies to cases with a single witness

0.6 - professional relationship

1.0 - no relationship

$E_4$  - Geographic relation between witnesses (when there are multiple observers, their relative location affects the certainty of the event)

0.0 - unknown

0.5 - together; also applies when there is a single witness

1.0 - independent (separate)

$E_5$  - Activity at the time of the sighting (measures the opportunity for a hoax)

0.0 - not specified

0.3 - recreational activity (walk, rest, outing, hunting, sport, at home, on vacation, etc.)

0.6 - traveling (moving, by any means)

0.8 - cultural or intellectual activity

1.0 - working (at work or on the way to or from)

$E_6$  - Age of the witnesses (indicates their degree of maturity and the validity of their testimony, based on their capability)

0.0 - unknown

0.2 - under 10 years or over 75 years

0.4 - between 10 and 17 years

0.6 - between 18 and 34 years

0.8 - between 35 and 74 years

1.0 - between 35 and 64 years

In the case of multiple witnesses, for  $E_2$  (profession) and  $E_6$  (age) the values are taken from the witnesses who provide the higher absolute value.

The range of  $\pi$ , therefore, is from 0.0 (the minimum, when no data are available) to 1.0 (the maximum, the theoretically optimum situation), and its values can be tentatively tabulated like this:

Up to 0.4 - low reliability--there is not enough level of confidence, mainly due to the absence of significant data

0.5 to 0.6 - normal reliability level--there is a basis to state that the testimony is valid

0.7 to 1.0 - excellent reliability

### Definition of the Certainty Index

Having now established the three indices that numerically define the quality of the information, the strangeness of the experience, and the reliability of the witness, it seems logical for us to finally attempt to combine them to develop a final coefficient that indicates the overall degree of certainty either for an individual event or a group of them (a sampling of cases or a catalogue).

We will call the Certainty Index (designated by  $\Delta$ ) the mathematical value that represents the most precise and objective information that the investigator relies on for the validity and importance of the phenomenon observed. The formula contains the three above-mentioned factors in the following relationship

$$\Delta = (Q \times \Sigma \times \Pi)$$

Then,  $\Delta$  represents a degree of certainty and it is read as a percentage. (For example, 0.25 would indicate that there is a certainty of 25%.)

The reason why  $\Delta$  is the product of the three factors is obvious: given that all three indices are strictly necessary to evaluate the confidence of an event, when one of them is absolutely certain (value 1), the formula should be reduced to the relationship between the other two, as the "suspicions" of the validity of the report can then fall only to the remaining ones. In the same manner, when two factors attain the value of 1, there will be only one parameter able to cast doubt on its certainty, with  $\Delta$  equal to the value of this third index. Likewise, if only one of the factors takes the value 0, the certainty index is automatically reduced to 0, because if any one of the three components is totally lacking in credence, it is then a complete waste of time to evaluate the others. To satisfy these requirements, the three factors are multiplied together.

The average value for  $\Delta$  is 12.5%, which equals the multiplication of three factors of 0.5. A certainty value which is lower than this can be considered as critical, as to its potential scientific validity concerns.

We are convinced that we have developed a reasonable measurement of the significance of UFO cases, through a system which is both complex enough and usable, and we hope that, when these criteria are generally adopted, one more step will have been taken on the long road toward standardization of the methods of analyzing the data contributed by the problem of unidentified flying objects.

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NOTE: The authors are willing to discuss the present standardization method with other researchers. The following address should be used to contact us:

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\* For example, if we have an exhaustive report of very high strangeness coming from an individual who is in a mental hospital, it is no longer necessary to continue with the evaluation of its supposed certainty. Or if an account with high  $\Sigma$  and  $\Pi$  values has been obtained by hearsay, it is also useless to try to assign it a certainty index.

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## CAN IMAGERY EXPLAIN CERTAIN UFO CLOSE ENCOUNTERS?

KEITH BASTERFIELD

It is February 1976. The location is Hobart, Tasmania, and the case is one investigated by Jackson and Roberts (1977). A man and wife have retired to bed for the night. The wife falls asleep, leaving her husband to have a cigarette. He puts out the cigarette, then the light, and is about to go to sleep when it happens.

He looks toward the doorway and the closed door when suddenly the door seems to get darker, and three figures enter right through the closed door! They are taller than the doorway and just walk right through as if there were nothing in their way as they advance toward the bed.

One entity to the man's right holds a silver, glowing bag in its hands. Another comes up beside his bed and puts out a hand toward him. They have no distinguishing features, no nose, mouth nor eyes visible and are black. After one entity puts its hands on the man's leg, the leg goes numb all the way to the waist. A second comes up with the bag and seems to put it under the bedclothes somehow. The man doesn't know whether the bed is enclosed in it, but the bedclothes certainly are. The entities start to slide the bag up over his body, and they get it up to his waist.

When one creature moves toward his wife, the man speaks to her but gets no response.

He then throws his cigarette lighter at her and she stirs. He yells to her to put on the light and she reaches to do so. The entities react. One steps up to the bedroom window which bursts open in an orange glow through which all of the entities then pass from view. The window returns to normal and the event is over. When questioned, the wife says all she knows is that she woke up to find her husband speaking out.

Was this an attempted abduction?

There have been similar reported instances elsewhere of nocturnal bedroom observations. Webb (1976) recounts the event where an American male awoke to a room lit up with a bright orange-red glow. Three humanoids were seen to "materialize." They had bald heads, grayish-white wrinkled skin, and rounded ears. The man passed out, only to come to on the floor unable to move. The entities examined him with an oval object which showed the bones of his leg. Shortly after that he passed out again.

Lorenzen (1977) described an incident in June 1977 in which a lady retired to bed at 11:30 pm. At about 11:55 she awoke, felt paralyzed, and could neither speak nor move. Later she recalled that a being abducted her, took her into a "chamber" where she was medically examined. During this she

reiterated her desire to go home and she came to sitting up in her bed. The time was 1:57 a.m.

Were these real physical abductions? I don't believe they were.

Recently, Peter B.C. Fenwick, a London psychiatrist and neurophysiologist, and Morton Schatzman (1980) conducted laboratory experiments with a woman who claimed to see an apparition that looked as real to her as any living person did. These apparitions obstructed her view just as real people would do, yet no one else was able to see them.

Laboratory tests showed that she was able to create what to her was an apparitional figure at will, blocking a black and white checkerboard screen showing a reversing pattern. Her brain wave patterns were monitored with an EEG machine and showed that her mind didn't register the pattern on the screen when she said that an apparition was blocking off her view of the screen, just as would be the case if a real person stood between her and the screen. Her brain behaved just as yours and mine would had we had the screen obstructed by another person, yet there was nothing physically interposed between her mind and the reversing pattern.

Tests showed that the blocking of the pattern occurred after light had been normally registered by her retina. It is thought that her mind somehow was responsible for creating the image. She was also found to be able to block noise, so that even though there was a loud noise going, her brain waves just didn't register it.

What, may you ask, have these two items in common? I believe they may well be related. To fully outline why, we must look at some background against which to set an hypothesis--the image hypothesis: an idea that may well explain percipients' observations in terms of a known psychological process, namely hypnagogic and hypnopompic imagery.

The naming of hypnagogic imagery is attributed to Alfred Maury, the French dream investigator who perceived in 1848 "faces" in the dark, in the interface between wakefulness and sleep. The term hypnopompic was first used by Myers in 1903 to describe imagery occurring between sleeping and

waking. McKellar (1972) reports encountering individuals who reported remarkably similar imagery which occurred when they were fully awake.

The imagery content is visual or auditory in the main, but may also include sensations of heat/cold, smell or touch. They may be reproductions of the events of the day or strange, bizarre images of pleasing or frightening proportions. Little control seems to be able to be exerted over their appearance, and thus a person could be easily frightened by their sudden onset. Reality and images of this kind can be readily confused. One of the most basic auditory images is that of hearing one's name called. You may recall instances where, sleeping or dozing while waiting for a morning call to breakfast, you hear your name called and obediently trot into the kitchen only to find a half-cooked breakfast and a puzzled chef.

Visual images range from simple patches of color to integrated and complex scenes. Objects can be "strange" or noticed from an unusual angle with sometimes an unusual clarity of detail being noted. Durations range from seconds to minutes. Persons experiencing these images comment on the unusual intensity of color and lighting, using such phrases as "strange luminosity" and "glow of the sun."

Surveys which have been conducted lead to speculation that such imagery is experienced by all but denied by some as some deny having dreams. The incidence of imagery among the population has been found to range from 50 to 70%, with events occurring to a number either nightly or regularly experienced on at least half the nights.

As an example of just how "real" these events can be, an instance quoted by McKellar (1968) is of note. A young couple had a routine of the wife getting breakfast ready for her husband and then seeing him off to work. One morning she recalled getting out of bed, washing, dressing, getting breakfast, and then kissing her husband goodbye. At this point she "woke up" still in bed, to find her husband kissing her goodbye. She had been asleep in bed all that time.

Green and McCreary (1975) related what they called type two awakenings where we find people awakening normally to find themselves

in bed. The surroundings at first appear normal but then become unusual or uncanny. Alternatively they may awake immediately to a stressed or stormy feeling. In either case, they may experience fear, panic or an hallucination or apparitional effects. This may also be accompanied by a seeming paralysis of the body or an "out of the body" experience. To an outside observer, the percipient would appear asleep, lying with eyes closed. Occasionally type two awakenings are simply the sensation of awakening, then really awakening.

After reading the relevant psychological literature, I talked to some of my acquaintances and found that there were a few who recalled similar experiences.

One man recalled an extremely vivid event which occurred when he was boarding with another man in a house in the same room. He had retired to bed when he viewed his friend enter the room with a bottle of beer and two glasses. The friend poured two glasses and sat one down by his bed for him to drink. After a while he reached for the beer, only to find nothing there. He turned to his friend to ask where the beer was. The friend's reply was that there was no beer, and that he (the friend) had entered the room and prepared for bed, noticing the man in bed apparently asleep, who had then waked up and strangely asked where was his beer. The initial event could not be distinguished from reality.

A lady described how she awoke one morning in late October of this year to find a hairy monster, typical of the "Yowie" variety, standing side on, in the doorway to her bedroom. Its feet were noted to be huge, oblong with no toes. The fur was dark brown, rough and tussed about. The observation was carried out in broad daylight at close range and presented itself as a firm, three-dimensional image that couldn't be seen through. Suddenly the monster just disappeared on the spot.

Let us now examine a few reported UFO events which have extremely similar characteristics to image events.

#### Gum Creek, South Australia, 1964

A farmer's wife, lying awake at 2 a.m., noticed a figure suddenly appear outside the

bedroom window as if a "movie screen had been unrolled." The scene seemed very bright, like daylight, and the entity was revealed in minute detail because of this unusual lighting. The male figure seemed to be taking "photographs," then advanced toward the bedroom window. The lady wanted to speak to the figure but found she could not. She slipped down into bed and fell asleep. No traces were found. (Hurford 1960)

#### Sandford, Tasmania, 1978

Awakening due to a dog barking, a woman rose at 11:30 p.m. and looked out of the window. She noticed a "doorway" of white light out on the rough, front driveway. It was dark everywhere else except through the door. Through it she could see the drive as if it were daylight. A golden glow spread from the door and both went out instantly. No traces were found. (TUFOIC, 1978)

#### Iuy Tanks, South Australia, 1973

A lady was traveling as a passenger in a semi-trailer, and decided to go to sleep at 2 a.m. About 3 a.m. she waked and heard a warm male voice telling her to look out of the window after it had called her by her first name. By the side of the road she saw an egg-shaped object surrounded by a "force field." The entire thing was alight with a white glow which seemed to come from all over and inside it. She feels that the oval may have been semi-transparent. This illumination was so good she was at a loss to compare it, both color and glow, with anything she could think of. Although the viewing time was short (5 seconds), much detail was noted. Two figures were associated with the object. The "force field" died down in an inexplicable manner. She woke up feeling fresh and upon questioning the driver found that he had not waked her, called her name, or in fact had seen anything unusual at all. (Basterfield and Godic, 1974)

#### Frankston, Victoria, 1972

While driving home, a 37-year-old housewife encountered a large silver-blue iridescent object hovering over her car. Twenty-two days later the same or a similar object appeared over her car at the same location. Suddenly the car's engine cut off and couldn't be restarted. She tried the steering wheel, pumped the brake, and changed gear, all to no avail. The car "controlled

itself" to the side of the road and stopped. All sound "drained out" of the air and she was given three messages. The engine then started itself and she drove to a police station to report the incident. Later a mental message told her to go back to the scene. On the way, a "man" materialized, then dematerialized inside her car.

Meeting two other people at the spot she again saw this "man," then lapsed into unconsciousness. While physically in the presence of two people who saw none of this, she described being taken inside a "room." There was no visible sign of illumination, yet the room was well lit. She then recovered inside the car. Other odd "psychic-style" events occurred to her around this time, e.g., voices in the head. She was regarded as a normal healthy person by those who knew her. (Little and Stapleton, 1972)

#### Boyup Brook, Western Australia, 1967

A man was driving alone at 9:30 p.m. doing a steady 100 km/hr. Suddenly he became aware of the approach of a lighted object from the air. The car was immediately "stopped dead" and all electrical systems ceased to function. There was no feeling of deceleration at all. Looking up, he reported seeing an iridescent blue oval over the car with a tube of light extending down into the car. After an estimated five minutes, the object left and he found himself traveling along at 100 km/hr again with all systems working and no feeling of acceleration. (Zech, 1967)

One can collect dozens of reports including abduction cases where the details reported contain the essential indications of being some form of imagery. I would therefore suggest that certain reports or a certain class of reports parallel known examples of imagery in style and format, although not in content. One recently investigated English case is particularly illuminating in this regard.

A girl, aged nine at the time of the events in 1976, reportedly had a long duration daylight encounter with a landed object and associated entity (Randles and Whetnall, 1978). She only told her mother about it in March, 1978, and since that date claimed several other experiences including "psychic-style" events. During one experience she was actually witnessed mid-contact by her mother. She was in a trance-like sleep! The investigators commented, "There is consequently every reason to assume that these experiences were not objectively real."

In summary, I believe that we may be researching reports from people who are able to generate imagery utilizing a background of terrestrial lore, in the same manner as Fenwick and Schatzman found in laboratory experiments. An analytical/laboratory approach could well be taken with cases which appear to have characteristics of imagery. A psychological interview concentrating on the sleeping/dream patterns of a person reporting such an event would certainly assist to clarify whether or not the imagery hypothesis is a valid one.

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# UFO MANEUVERS AND RADIATION: A THEORETICAL PERSPECTIVE

ALAN HOLT

## Introduction

The human race stands on the threshold of a great adventure. We are poised at the gateway to a vastly greater understanding of the universe and our position in it. The differences between men and women which we perceive in our assessment of world events may soon greatly diminish with the discovery of a much grander scale of events which our civilization now only dimly perceives.

In an attempt to contribute to this wave of human evolution, the author has developed a theoretical model of space-time interactions which provides an opportunity for extensive experimental evaluation and early applications in advanced propulsion, energy, and other systems. The perspective provided by this model is, as a minimum, unique. Thus, while it remains for the present in the same status as many theoretical models (experimentally unconfirmed), it may be interesting to test its usefulness in the analysis of UFO phenomena. In particular, since the model is not bound by linear approximations, it has the potential of describing not only highly non-linear interactions among fundamental energy forms, but can also reflect reasoning processes which are predominately highly non-linear in character.

For example, nuclear physicists use the properties of virtual particles to explain the

nature of particles and interactions detectable in space-time reference frames, but we have difficulty recognizing the casual relationships which govern the transference of particles from the virtual to the space-time state and vice versa. The transference is a highly non-linear effect which can be thoroughly understood only if our reasoning processes have a reality base of highly non-linear interactions rather than the linear interactions which make up most of our accepted human experiences.

What kind of technology might a civilization with a highly non-linear reasoning process develop? Could such technology duplicate the maneuverability and radiation characteristics associated with UFO phenomena?

## Theoretical & Technological Assessment Groups

The two groups of characteristics which are most likely to provide clues to the causes of UFO phenomena are the maneuverability and radiation characteristics. While it is a very rare case which provides extensive and accurate data for these characteristic groupings, almost every UFO observation of significant merit provides some data. While it is not too difficult to explain the maneuverability and radiation characteristics of one encounter by references to potential physical processes and projected developments in physics, it is very

difficult to find physical processes and theoretical projections which can describe groups of UFO encounters.

For the moment, let us assume that the great majority of significant UFO encounters represent the results of the interaction between members of our civilization and civilizations whose technological capability exceeds our own by various degrees. Then we can attribute most of the maneuvers as being demonstrations of the performance characteristics of the air/space craft. Some of the maneuvers and most of the reflected and emitted radiation can be viewed as by-products of the "propulsion" systems. Can we then use the maneuver and radiation characteristics of a particular UFO encounter to categorize the degree of technological capability required to duplicate these characteristics?

Each UFO researcher would be expected to have a personal view of the technological advancement represented by a particular encounter, in some cases backed up by a credible theoretical description. Based on the unified field modulation theory developed by the author, several theoretical and technological assessment groups have been identified which can be used to broadly categorize the technology which may be responsible for a particular UFO. At the same time, the categorization reflects the depth of understanding which the visiting civilization has of the physics of the universe and the characteristics of that civilization which differ from our own. A greater understanding of the physics of the universe is assumed to be primarily dependent on a non-linear evolution in reasoning and perceptual abilities rather than on the magnitude and extent of experimentation.

Elements of the unified field modulation theory are discussed in publications describing the Field Resonance Propulsion Concept, 1,2 but the mathematical model has not yet been published. Thus a detailed description of the rationale for the groups defined below will not be given. However, the following summary description of the model should provide helpful insight into the logic used to identify the groups.

The applications model developed for early experimental testing approximates a highly non-linear relationship between a seven-dimensional hyperspace or phase space and space-

time. The energy interactions which occur in space-time can be viewed as constituting a subgroup of the group interactions defined by the seven-dimensional phase space. Only a portion of the group of energy interactions actually manifest in the hyperspace. There exists a "projective mapping" relationship between space-time energy patterns and hyperspace energy patterns (which, in effect, carry the intelligence defining the characteristics of space-time energy patterns). Thus, the seven-dimensional hyperspace is fully manifested only by a complete manifestation of energy patterns in the four-dimensional space-time which we are familiar with and perhaps by manifestations in other four-dimensional phase spaces.

The virtual, unmanifested hyperspace energy patterns determine the characteristics of the fundamental forces manifesting in space-time (gravitational, electromagnetic, and nuclear). All manifestations in the hyperspace and space-time can be defined as energy currents which undergo continuous but highly non-linear transformations between the seven- and four-dimensional spaces. Unless the transformation is a highly coherent one, it will alter the manifestation of all fundamental forces in a localized or global region of space-time. It is this coherence property and a specific property of the non-linear transformation related to the rate of energy pattern change which were used in the development of the assessment groups.

The following assessment groups are presented without any detailed rationalization or discussion. Each group represents a significant step in technology development and a different level of "maturity" in a civilization's understanding of the physics of the universe.

Group A: Propulsive/Non-Propulsive  
Combinations (Nuclear/Electromagnetic  
Gravitational Interactions)

0 MANEUVER CHARACTERISTICS

- o Unstable, propulsive hovering
- o Propulsive appearing plasma emissions
- o Horizontal flight dominant mode--very slow to high velocities, slow right angle turns
- o Occasionally high acceleration along vertical or gravitational field direction

o RADIATION EMISSIONS

- o Broad-band electromagnetic radiation--some coherent EM
- o Nuclear emissions--gamma rays, x-rays, nuclear particles
- o Coupled radiation--hydromagnetic and gravimagnetic in spurious forms

Group B: Non-Propulsive (Electromagnetic-Gravitational Interactions)o MANEUVER CHARACTERISTICS

- o Unstable hovering--gyroscopic oscillations
- o High velocity horizontal flight--attitude changes with flight direction changes, rapid right angle turns
- o Extreme vertical accelerations--acceleration capability decreases with increase in angle from gravitational fields

o RADIATION EMISSIONS

- o Coherent electromagnetic radiation--some incoherent EM
- o Nuclear radiation very localized and specific in type
- o Coupled radiation--hydromagnetic and gravimagnetic substantial, some of the radiation coherent
- o Some hyperfield effects

Group C: Gravimagnetic/Space-Time Interactionso MANEUVER CHARACTERISTICS

- o Steady hovering
- o Extreme horizontal and vertical velocities, multiple (sequential) right-angle turns at high velocity
- o Extreme horizontal and vertical acceleration - greatest acceleration observed within a small angle of the gravitational field lines
- o Abrupt disappearance and reappearance at remote location (unusual photographic effects)

o RADIATION EMISSIONS

- o Highly coherent electromagnetic radiation
- o Nuclear emissions--some event-related particle emission possible

- o Coupled radiation--coherent gravimagnetic harmonic hydromagnetic radiation
- o Hyperfield effects--extensive

Group D: Space-Time/Hyperfield Resonance Interactionso MANEUVER CHARACTERISTICS

- o Steady hovering
- o Abrupt disappearances and reappearances over very small or very large distances
- o Occasional extreme velocities or accelerations (horizontal/vertical)-sequential, small space-time jumps

o RADIATION EMISSIONS

- o Minimal coherent EM radiation
- o Coupled radiation--highly coherent gravimagnetic
- o Coherent hyperfield effects

Group E: ?Categorization of UFO Close Encounter Cases

Few close encounter cases provide sufficient information about maneuver characteristics and radiation emissions to clearly place the potential technology in one group or another. In some cases the evidence supports a mixture of characteristics associated with two groups. In many other cases, however, certain characteristics stand out making the case unique and clearly indicative of phenomena deviating from known and accepted laws of physics. Three of these cases have been selected for detailed examinations of their maneuver and radiation characteristics and assignment to one or more of the technology assessment groups. In the process of discussing the assignment of these cases, it is hoped that some of the rationale for the development of the groups will be clarified.

Case 1SYNOPSIS

- o Marine Corp Captain (Ret.), Meridian, Miss., July 10, 1967, 5:50 p.m.
- o UFO apparently caused car to stop and radio to cease working

- o Large, cymbal-shaped object passed in front of car 200-300 feet overhead, object tilted, then accelerated rapidly, disappearing into low-flying clouds
- o Size: side view--length of house, top view--size of golf green

#### MANEUVERS OBSERVED

- o Initially appeared to be crashing into grove or line of trees several hundred yards to left of location
- o Moved silently--no propulsion noises, extreme wind noises discernible, no exhaust
- o Tilted upward, appearing to move to the immediate right
- o Accelerated rapidly at an angle almost straight up and disappeared into low-flying clouds
- o "Flight like darting of hummingbird"

#### RADIATION EFFECTS

- o Stopping of car engine and radio, restarted after object disappeared, car a minimum of 200 feet away
- o Extreme wind noises
- o Underside a dirty metallic gray, topside a deep metallic blue

Case 1 describes an aerial phenomenon which, if explained in terms of advanced technology, would be assigned to Group B. Group B describes a technological capability effective in achieving accelerated motion along gravitational field lines which are generally vertical at most locations on Earth. Changes in flight direction to be followed by a rapid acceleration will, in general, be caused by changes in energy configurations which are not of sufficient coherence (spatially and temporally) to achieve the desired result without an accompanying spacecraft attitude change.

Stopping of the car engine and radio are indicative of radiative effects caused by coupled radiation, hydromagnetic or gravimagnetic, and possibly by what are called hyperfield effects. These are effects which may be triggered by electromagnetic and gravimagnetic energy patterns but which can also produce changes in the atomic and molecular structure or their interactions in nearby objects. The hyperfield effects can be rever-

sible or leave only a small residual change in this group (energy pattern changes are not sufficiently coherent to cause large-scale permanent effects). It should be pointed out that the effects need not be destructive in character.

The extreme wind noises could be caused by a type of gravitational vortex. Since the UFO was otherwise silent, non-conventional wind movement was involved, implying a gravitational or hydromagnetic effect. The difference in the color of the top and bottom sides could be due primarily to sun and viewing angle differences, or it could "reflect" subtle atomic structural differences induced by the propulsion system. These characteristics are good examples of data which do not significantly contribute to a group assignment decision or which must be used in support of other criteria.

The comment made by the observer concerning "flight like the darting of the hummingbird" could be interpreted to mean that maneuver characteristics similar to those described in Group C were present. As the ability to generate highly coherent energy pattern changes increases, the ability to rapidly accelerate without regard to the magnitude of the direction change also increases. It is possible that the technology which may be the cause of the UFO is getting close to transitioning to a Group C, or the UFO may be a local craft used by a civilization with Group C capability.

One final comment: When an observer reports that he or she initially believes the UFO will crash or has crashed because of its flight performance, it is a good indication that the deceleration (and acceleration) capabilities involve a gravitational type effect. It is hard to conceive of a propulsion system that could cause an abrupt stop of an object, which appears to have a velocity or acceleration enough to make a conventional aircraft crash, without somehow interacting with the gravitational or inertia fields.

#### Case 2

#### SYNOPSIS<sup>4</sup>

- o B-47 (six crew members) on gunnery and electronic counter-measures training mission

- o Altitude, 30,000 feet, Gulf of Mexico/Texas, fall 1957, city lights/flares observed below
- o Observed glowing source ("big as a barn") visually and on ground and onboard radar

#### MANEUVERS OBSERVED

- o White light initially crossed in front of plane at velocity much higher than airplane speed
- o UFO paced B-47 at distances of 5 and 10 miles for an extended period
- o Co-pilot and number two radar monitor were "impressed by the sudden disappearance and reappearance of object"
  - B-47 went to max speed crossing above UFO which subsequently disappeared from ground and onboard radar
  - Pilot dove at UFO which had reappeared at 15,000 feet below, and as plane approached the apparently motionless UFO, the visual observation and radar signal return capabilities again were lost (UFO disappeared again)
  - UFO went from right to left back to right side of plane, leaving no radar trail

#### RADIATION EFFECTS

- o White light emission at high velocity and close range
- o "Huge steady red glow" at 10 miles
- o Strong emission recorded at 2800 MHz-- did not emit at other frequencies monitored
- o UFO reflected radar waves at various frequencies
- o Radar emission (2800 MHz), visual EM, and radar reflections disappeared abruptly and reappeared abruptly at a different location

Case 2 describes an aerial phenomenon which, if explained in terms of advanced technology, would be assigned to Group C. Group C encompasses a technology capable of generating energy patterns with a very high degree of spatial and temporal coherence. Local gravitational fields can be easily overcome leading to large accelerations both vertically and horizontally. The greatest acceleration re-

mains along the vertical, however. The Group C technology is capable of moving the spacecraft from one space-time point to another (hyper-space travel) which is the dominant characteristic of this group. The capability to hover with an absolute steadiness is also related to the space-time translocation capability. The precise energy pattern generation capability allows the craft to maintain a near absolute space-time reference with respect to the observer. To the observer it sometimes appears or seems that the UFO is not fully a part of the reality the observer is familiar with.

The co-pilot and number two radar monitor were impressed with the ability of the UFO to disappear and reappear at a distant location without leaving a radar trail between the two points. While unusual field effects could be used to explain the disappearance of visual and radar signals and their abrupt reappearance, we can at least say that space-time jumps are a possibility.

The radiation emissions at first glance seem to be a mixed bag as far as Group C is concerned. On the one hand, we have an apparently coherent emission at 2800 MHz, and on the other, white light emission and an apparently non-coherent red glow. Unfortunately, we usually do not observe radiation emitted by the propulsion system which is not modified by interaction with the atmosphere. The fact that the white light was observed while it was in rapid flight and the dull red glow was observed while the UFO was pacing the aircraft is perhaps an important indicator of the true character of the radiation emitted by the UFO. If the UFO is emitting a highly coherent, highly energetic radiation pattern, it would be expected that ionization would be generated around the UFO. If there is a dependence between flight performance and the wavelength of the coherent EM radiation emitted, then we might expect to see a white ionization during a high velocity portion of the flight and a red ionization during a lower performance portion (station keeping in this case). The 2800 MHz radiation could be a harmonic of the higher frequency radiation, directly generated or generated indirectly through atmospheric effects.

Group C technology can also exhibit extensive coupled radiation (coherent gravimagnetic and harmonic hydromagnetic radiation) and extensive hyperfield effects. Some of the hyperfield effects could have a strong, perma-

nent residual remnant in objects exposed to the non-coherent in the space-time sense and thus may be restricted to local areas around the spacecraft. This characteristic of Group C might explain why the UFO kept its distance in the 5 - 10 mile range, risking only a quick near encounter which would not seriously impair aircraft systems.

At this point, it should be mentioned that other UFO close encounters do include radiation effects which appear to be highly coherent visually without any dramatic ionization effect to mask them. For example, very pure and penetrating red or green colors have been observed as well as highly coherent white light (very penetrating white light). Perhaps the distances involved with Case 2 masked the coherence of the radiation some, or perhaps the technology associated with the UFO had just made the transition into Group C capabilities. Group D capabilities are such that a continuous flight path would not normally be observed. Space-time jumps, even very small ones, would be so easy that they would be the primary means of transportation. Since the Case 2 UFO did buzz the plane and pace the plane for long periods, a Group D technology or civilization appears not to be appropriate. It is true, however, that a civilization with Group D capabilities could limit its capabilities to Group C for specific purposes.

### Case 3

#### SYNOPSIS<sup>5</sup>

- o Vickie and Colby Landrum, Betty Cash, traveling isolated road near Dayton, Tex, December 29, 1980
- o Diamond-shaped UFO emitting a plasma-like flame from the bottom blocked the road
- o Object rose (flame emission stopped) and was surrounded by 15 double and single rotor helicopters which "escorted" the object as it moved toward the southwest
- o UFO and helicopters were observed two more times by the witnesses
- o UFO and helicopters were noted by additional witnesses

#### MANEUVERS OBSERVED

- o Steady, slow horizontal flight with only slight hum

- o Hovering with emissions of plasma pulses moving UFO up and down (propulsive-like effects), beeping sounds
- o Descended and ascended at a slow rate

#### RADIATION EFFECTS

- o Very intense white light covering or lighting up large area (while hovering)
- o Intensity substantially decreased while moving
- o Rose-colored, flame-like plumes emitted from bottom of diamond
- o Car door handles heated beyond touch temperature
- o Car's interior atmosphere heated
- o Car dash heated sufficiently to leave permanent marks with pressure
- o Observers suffered effects similar to nuclear/microwave radiation

Case 3 describes an aerial phenomenon which if explained in terms of advanced technology would be assigned to Group A. Characteristic of this group is the use of nuclear/electromagnetic gravitational interactions to nullify the effects of Earth's gravity and the use of propulsive systems for the horizontal portion of the flight. Since the gravitational or inertial fields are not manipulated for horizontal flight, slow to moderately high velocities with slow right-angle turns would be expected. Occasionally a high acceleration along a vertical direction could be observed.

The energy patterns generated in this group are sufficient only to accomplish the basic gravitational field nullification and occasional acceleration along the vertical. Since the coherence of the patterns is comparatively low (as compared to Groups B and C), the energy transformation process is basically inefficient. If nuclear forces are directly used, then nuclear byproducts in the radiative emission would be expected. If electromagnetic/gravitational interactions are used, then extensive EM or hydromagnetic radiation might be expected. Observation of a propulsive plasma emission would be expected for propulsion purposes, or to discard the by-products to avoid system breakdown.

The slow horizontal flight observed in Case 3, the radiation effects suffered by the two women and boy, the observation of propul-

sive plasma plumes, and the extreme heat generated in the cur are consistent with Group A characteristics. The extreme heat may be associated with generally incoherent microwave radiation. The very intense white light observed while hovering versus the much more subdued lighting while traveling horizontally leads one to the conclusion that excess EM energy was being radiated at that point.

The diamond shape and the slight hum heard while the object was in horizontal flight could tend to push the capabilities towards Group B. If the horizontal flight does not use gravitational field effects, a diamond shape would seem to be detrimental to flight performance. The slight hum heard does indicate that some electromagnetic if not a gravitational effect may be involved. Perhaps an interaction with Earth's magnetic field may be used in horizontal propulsion.

### Conclusion

We now come to the final question. Can the technological assessment groups tell us anything about the characteristics of the occupants piloting the spacecraft and their civilization?

If we take the spacecraft to be representative of the general understanding of the physics of the universe which has been acquired by the civilization, then the technology inferred from maneuver characteristics and radiation effects can indeed be used to gain insight into the nature of their civilization. For example, a Group D civilization has for many years understood and worked with transformations between space-time and hyperspace or other dimensional spaces. Their reasoning processes and their learning experiences would be expected to be quite different from our own. Yet if they recall their own early struggles as an emerging civilization, they may feel an obligation to be of help to a struggling civilization such as Earth's.

A Group C civilization, while having the wisdom associated with space-time/hyperspace

transformations, could perhaps more readily identify with mankind. Their reasoning processes should have substantial similarities with ours. Their perceptual abilities may have evolved to a point where common use is made of what we call extrasensory capabilities, but their learning experiences could still be largely centered on a space-time reference frame similar to our own.

A Group B civilization, while not having perfected space-time transformations, nevertheless would understand the basic physics involved. The manipulation of gravitational fields would enable this civilization to evolve away from many of the problems which confront our current civilization. In general, working with hyperfield effects relating the fundamental forces results in a unified field theory which can be used to benefit all aspects of a civilization. At the same time, a Group B or C civilization need not have a similar range of emotions nor the same value structure as we do. We should have no difficulty in communicating with a Group B civilization, however.

A Group A civilization is one striving to overcome the limitations seemingly imposed by space and time, but lacking a coherent view of the relationships between space-time, hyperspatial transformations, and the fundamental forces. A partial understanding is used to develop some capabilities. Without a space-time jump capability or a ride with someone else, it would appear to be very unlikely that we would experience many visitors of this type. Group A could be used to describe the advanced research sector of our current civilization on Earth.

As we proceed with our own experimental research relating to the interactions between space-time and hyperspatial energy patterns, we will refine the technological groups which have been presented. As a result, we may learn more about the diplomacy we should use in our contacts with visitors from other civilizations.

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## ARE WE ASKING THE RIGHT QUESTIONS?

JOAN JEFFERS

For 34 years we have been collecting data from reports of unidentified flying objects, and are little closer to a solution in September 1981 than we were in September 1947. We attribute this failure to lack of funds, lack of trained investigators, lack of interest on the part of the majority of scientists, lack of cooperation from government agencies. We look through piles of reports of sightings and wonder what UFOs are trying to tell us, or whether there is a lack of cooperation from the phenomenon as well. But--are we asking the right questions?

We study reports of the behavior of UFOs for clues. We scrutinize claims of abductions of humans by UFO occupants for concrete clues to the equipment aboard their "spacecraft" as compared to our own. This seems a valid approach. The needle-in-the-abdomen pregnancy test endured by Betty Hill is similar to the laparoscopy procedure we now use for diagnosis and treatments. The huge "eye" reported to scan the body could well be something similar to ultrasound examination.

Both of these procedures were at least concepts before they were reported by abductees. Many UFO witnesses report paranormal aspects of sightings, ranging from just being drawn to a window to teleportation and telepathic communication with UFO occupants. In light of the apparent parallels in medical procedures, it is unfortunate that we know so little about what we call the paranormal, and that most scientists ignore, if not reject, psychic phenomena.

Most investigators pay little attention to the puzzling paranormal aspects of a UFO report, noting only that they have been reported before. Perhaps we are not delving deep enough. Dr. Hynek suggests that we must not disregard the paradoxical behavior of UFOs, nor the paranormal aspects reported by witnesses (Hynek, 1981). Instead of dismissing the psychic aspects, we should be studying them. Every investigator should be aware of the work done in psychical research. To learn if the paranormal aspects contain a message, we must learn what questions are the right ones to ask.

### Is Anyone Looking for a Message?

Dr. Dunton Jamison suggested at the CUFOs conference in 1976 that a study be done to determine if UFO witnesses, especially witnesses to paradoxical behavior, might differ from non-witnesses in psychic profile (Jamison, 1976). Just a month prior to that conference, I had completed a preliminary study in this area.

Many writers (Keel, Stelger, etc.) have stated in books and articles that a psychic connection exists between UFO occupants and UFO sighters. I was intrigued, but could find no real support for the theory beyond the anecdotal. Then, in early 1975, Dr. R. Leo Sprinkle sent me a copy of his study of individuals who claimed psychic impressions about or communication with UFOs and their occupants. This study consisted of several psychological tests and a questionnaire which asked for information from participants such

as interest and experience in ESP, UFO observations and impressions of UFOs, and possible communications with UFO occupants. Details can be found in the paper, "Psychic Impressions of the UFO Phenomena" (Sprinkle, 1975). Part of his conclusion was:

... the results of this survey indicate that most of the participants believe they have observed the UFO phenomena. The statements of many participants suggest that they have experienced direct or indirect communication with UFO occupants. Some participants claim to have experienced "mental communication" with UFO occupants.

If further investigations were conducted and revealed similar findings, then many puzzling questions would face UFO investigators: How do UFO observers obtain these impressions of communication with UFO occupants? If hypnotic and ESP processes are involved, for what purposes are these used by the occupants?

The physical, biological, psychosocial, and spiritual implications of these questions should serve as a challenge and, hopefully, as a spur to further investigation of these interesting experiences of unusual phenomena.

Dr. Sprinkle sent me a copy of his paper after I had participated in an expansion of this study when, during a period in which I was investigating a contactee case for him, I had a precognitive dream which seemed very real and involved being taken aboard a UFO, and which I shared with him.

I was intrigued by his study. Since the participants had been largely self-selected, I wondered about the possibility that a survey of witnesses selected from the files of the Pennsylvania Center for UFO Research might yield similar information. I was a very busy undergraduate at the University of Pittsburgh at the time, so that remained only an idea until a curious experience in June 1975.

I had an irresistible urge to look out my window, certain I would see a UFO there, but saw nothing. A short time later, however, I learned that at the same time I had yielded to the urge to look out, a UFO had been reported hovering 100 feet over a house in

which I had lived in 1967 (when I had a rather spectacular CEI). This convinced me that at least a basic study of the psychic connection should be pursued.

When I returned to Pittsburgh in the fall, I began preparations for an independent study during winter term. The most difficult aspect of preparation was finding an advisor for such a study. I was fortunate to have Dr. R.A. McConnell, prominent for his work on psychokinesis, at the school. He was unable to take on any more students, but recommended Dr. Margaret Anderson, another parapsychologist, who agreed to become my advisor though she knew little about the UFO phenomenon.

#### Trying to Ask Some of the Right Questions-- The Survey

The hypothesis to be tested was: Is there a relationship between peoples' beliefs that they have psychic abilities/experiences and the sighting of UFOs by these people? Because of limited time and resources, it was decided that a questionnaire would be the most efficient method for data gathering to test the hypothesis. Permission was obtained from Dr. Sprinkle to adapt his questionnaire to the purposes of this study. A statement of agreement to participate in psychological testing was included as an option, so that Dr. Sprinkle might later include some of the more interesting respondents in his survey.

The questionnaire was divided into five parts, with questions to solicit information in the following areas:

- Part I Self information
- Part II Psychic interests and abilities
- Part III UFO phenomenon interest and experience
- Part IV UFO occupants
- Part V Impressions and opinions
- Part VI Space for additional comments, explanations, drawings, or questions

(See Appendix I - Questionnaire)

Only a portion of the information collected was used in this study. I had hoped that at a later time, analyses of all parameters could be done.

Participants were selected from the "quick reference" file maintained by Stan Gordon, then director of the Pennsylvania Center for UFO Research. This file contained for each

sighting report the name, address, and/or telephone number of the witness; date, time, and location of each sighting; a short summary of the report; and results of the investigation--whether the object sighted was identifiable or unknown.

Of the 692 reports of unknowns for the years 1973 through 1975, 120 (17.31% of the total population) were selected using the Table of Random Numbers. A letter explaining the general purpose of the survey, and the researcher's association with the PA UFO Center (citing the Center as the source for names) accompanied the questionnaire. Mailing was done the last week of February 1976, and an arbitrary cut-off date of April 10 was set so that any forms received after that date would not be included in the initial phase of the study.

Thirty (25%) of the forms were returned marked "addressee unknown," or "forwarding order expired." I had anticipated that a fairly high percentage of the questionnaires would be undeliverable because of the time which had elapsed since some of the reports had been made. Eight forms (6.66%) were returned uncompleted, but with notes of explanation. Of these, five witnesses stated they had become convinced that what they had

seen could be explained as natural phenomena; two stated they did not want to become involved in the UFO "controversy." One couple explained that because of slanted and near-slanderous reporting of events connected with their sighting in a "UFO magazine," they would no longer participate in public or private discussion of their experience. Three forms (.025%) were returned so incomplete as to be useless for the study. Two forms (.016%) arrived after the deadline.

Fifty completed forms were returned for inclusion. This represents 7.22% of the total population from which they were drawn, and 44% of the number of forms sent out. This is a high percentage for a survey done by mail.

A control group was arbitrarily chosen for comparison. Participants were individuals attending a non-credit course in ufology at Community College of Allegheny County (Pennsylvania). The 19 people in the control group, therefore, had an interest in UFOs, but none reported having had a sighting.

Information from the completed forms was tabulated as they came in. The portion of the data used in this study appears in Tables I and II below, and the whole questionnaire is included as the Appendix.

TABLE I

	TEST GROUP	CONTROL GROUP
Sex of participants	Males: 20 Females: 30	Males: 12 Females: 7
Total number of participants	Total: 50	Total: 19
Average age, in years	37.3	35.3
Average number years of education	12.6	14.6

Part II, Question 1, to belief in PSI abilities had the optional answers of Yes, No, and Not Sure. Those who checked Not Sure were included as people who had a belief that they had some psychic abilities only if they (1) added comments indicating psychic events

related to their possible abilities, or (2) answered Question 4 of Part II as to by what processes they gained their impressions, or (3) answered Question 5, through what process did they gain most of their psychic impressions.

TABLE 11

NUMBER REPORTING THEY HAVE HAD	TEST GROUP	CONTROL GROUP
1. Psychic abilities/experiences	40	9
No psychic abilities/experiences	$\frac{10}{50}$	$\frac{10}{19}$
2. Dreams or experiences directly related to the UFO experience	15	0
No dreams or experiences related to a UFO experience	$\frac{35}{50}$	$\frac{19}{19}$
3. "Lost time" experience at the time of the sighting	2	0
No "lost time" experience related to UFO experience	$\frac{48}{50}$	$\frac{19}{19}$
4. Mental communication with UFO occupants	6	0
No mental communication with UFO occupants	$\frac{44}{50}$	$\frac{19}{19}$

Question 8 was divided into six parts and referred to psychic experiences. Each part was assigned a value and totaled values determined inclusion. Having seen a ghost or experienced out-of-the-body phenomenon were given the greatest weight. Having had a psychic or religious healing, or having produced a psychic photograph were given moderate weight. Having heard unexplained voices on tape recordings, radio, tv, or the telephone were ranked at zero since these events most often can be easily explained. Though there may be objective evidence only for claims of psychic photography, all replies were accepted as true reports by the witnesses. The study was to test the individuals' belief that they had psychic abilities and experiences, not to attempt to establish the reality of such experiences.

Using the above criteria, it was found that 40 of the test group and 9 of the control group believed that they had psychic abilities and experiences.

Data were ordered so a Chi square ( $\chi^2$ ) could be performed. Referring to Table 11, Numbers 2, 3 and 4, this test cannot be performed on these because of the values less than five. The values of Question 1 were large enough to do the Chi square. Eighty percent of the UFO sighters and 42% of the non-sighters held beliefs that they had psychic experiences/abilities.

The hypothesis to be proven was:

$H_1$  - There is a relationship between people's beliefs that they have psychic abilities or experiences and the sighting of UFOs by these people.

Or the null hypothesis:

$H_0$  - There is no association between people's beliefs that they have psychic abilities or experiences and their sighting of UFOs.

CONTINGENCY TABLE

	<u>Belief in Abilities</u>	<u>No Belief in Abilities</u>	<u>Total</u>
UFO sighting	40	10	50
No UFO sighting	<u>9</u>	<u>10</u>	<u>19</u>
	49	20	69

Computations appear on the following page.

The result of  $\chi^2$  of 9.66 is slightly greater than 2-1/2 times the expected 3.84. Dr. Jamison has calculated the probability of the result at 1 in 20 and feels it is suggestive.

There are severe limitations with this study. The data were collected by questionnaire only, rather than in-depth interviews. The sample was very small, and the groups were not matched in size or demographics. It tested witnesses' belief in their psychic abilities, but did not address whether or not they indeed possessed such abilities. And this researcher has a bias in the direction of the hypothesis. The study does suggest that some of the right questions have been asked, and gives a strong indication that there is a psychic component in UFO sightings which should be investigated further.

Though suggestive, it proves nothing except that participants in this small sample who believe they have psychic abilities or experiences do tend to report UFOs more often than others without belief in such abilities. It may well be that these people just tend to be more attentive to events in their environment and/or tend to interpret events in exotic ways, or simply have fewer inhibitions about reporting them.

Clearly, this non-physical aspect (the subjective variables) deserves further investigation. Some suggestions for models for better controlled studies have been made by Jamison, Sprinkle, and Johnson. These are listed in the References, so I will not detail them here. I will note some things I feel should be included when new studies are planned.

In spite of the problems with carrying out such a plan, I do think the data should be gathered by interview rather than by questionnaire. I feel the test group should consist of new sighters only, in the initial phase of the study. Interviews should be done as soon after the sighting as possible to reduce the contamination of recall which occurs with time. I strongly feel that we must avoid the cultist and contactee elements for the present. Abductees should be treated separately, and compared/contrasted with witnesses to all other classifications of sightings. If these cases of highest strangeness yield more information for the physical aspects of UFOs, they may also yield more in the psychic and psychological areas.

We should seek to discover whether psychic aspects appear in multiple-witness as well as single-witness sightings, and whether there has been a recurrence of sightings among those with a psychic factor--is it present only in "repeaters"? Personality, psychological, and psychic profiles must be made for the participants, and some baseline in these established for the general population.

It must be an interdisciplinary study, and perhaps cross-cultural. We must involve psychologists, sociologists, anthropologists, statisticians, parapsychologists. We should enlist the aid of scientists involved in psychobiology. It has been my experience that most social scientists are reluctant to become involved in the study of UFOs and are less than objective on the subject. Yet I am certain people with the necessary expertise who would be willing to participate must exist.

Asking questions about the psychic components of UFO reports may be a possible route to information from the data that up to now has been ignored.

COMPUTATIONS FOR CHI SQUARE				df=1	$\alpha = .05$	
	$f_o$	$f_e$	adj. $f_e$	$(f_o - \text{adj. } f_e)$	$(f_o - \text{adj. } f_e)^2$	$\frac{(f_o - \text{adj. } f_e)^2}{\text{adj. } f_e}$
UFO sighting + belief in psychic abilities	40	29	29.5	10.5	110.25	3.73
UFO sighting + no belief in psychic abilities	10	21	20.5	-10.5	110.25	5.35
No UFO sighting + belief in psychic abilities	9	11	10.5	-1.5	3.00	.29
No UFO sighting + no belief in psychic abilities	10	8	8.5	1.5	3.00	.29
	<u>69</u>	<u>69</u>	<u>69.0</u>	<u>0</u>		$\chi^2 = 9.66$

Significant value of  $\chi^2$  for testing  $H_0$  when  $df=1$  and  $\alpha = .05 = 3.84$ .  
 If  $\chi^2$  is equal to or greater than 3.84, then we can reject the null hypothesis ( $H_0$ ), and accept  $H_1$  that there is a relationship between people's beliefs that they have psychic abilities/experiences and the sighting of UFOs.  
 $\chi^2 = 9.66$



## I. Self information con't.

11. General duties of present position: \_\_\_\_\_  
 \_\_\_\_\_
12. Other occupational positions which have been held prior to the present one, including military service: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
13. Religion: Catholic \_\_\_ Prot. \_\_\_ Jewish \_\_\_ Other \_\_\_\_\_
14. Do you consider yourself (check one):  
 Very religious \_\_\_\_\_ Somewhat religious \_\_\_\_\_  
 Little interest in religion \_\_\_\_\_ Agnostic \_\_\_\_\_ Atheistic \_\_\_\_\_
15. Do you attend church services: More often than weekly \_\_\_\_\_  
 Weekly \_\_\_\_\_ More often than monthly \_\_\_\_\_ Monthly \_\_\_\_\_  
 More often than four times a year \_\_\_\_\_ Once a year \_\_\_\_\_  
 Not at all \_\_\_\_\_
16. Have you had prior to or since your sighting (if "yes" please give approximate dates):
- A. Any serious illness or injury: \_\_\_\_\_  
 Did any of these involve the head or back: \_\_\_\_\_
- B. Any family, social or emotional upheaval (either problems or "good" experiences, ie. divorce, job promotion or change, birth of a child.) Please use last sheet to give details of above.  
 \_\_\_\_\_
17. Present state of health: Good \_\_\_\_\_ Fair \_\_\_\_\_ Poor \_\_\_\_\_
18. Were you taking any medication or drugs (include alcohol & tobacco) prior to your sighting?: \_\_\_\_\_ If yes, what \_\_\_\_\_
19. Have you ever experienced any of the following (or anything similar):
- |                      |                          |
|----------------------|--------------------------|
| Self-hypnosis: _____ | Petit mal seizures _____ |
| Hypnosis _____       | Blackouts _____          |
| Sleepwalking _____   | deja vu _____            |
| Fainting _____       | Day dreaming _____       |
| Amnesia _____        | Other _____              |
- If yes to any of above, please give some details \_\_\_\_\_  
 \_\_\_\_\_

II. Psychic Interests and Abilities (please use last sheet for any examples or elaboration or comments.)

1. Do you believe you have some ability to:
- A. Gain extra-sensory perceptions (ESP) of thoughts and feelings of other people (Telepathy)? YES \_\_\_ NO \_\_\_ NOT SURE \_\_\_
- B. Gain impressions of events or objects which are outside your usual environment (Clairvoyance)? YES \_\_\_ NO \_\_\_ NOT SURE \_\_\_

## II. Psychic interests and abilities con't.

C. Gain impressions of future events (Pre-cognition)?:

YES \_\_\_\_\_ NO \_\_\_\_\_ NOT SURE \_\_\_\_\_

D. Influence the physical environment around you (Psychokinesis or "mind-over-matter") YES \_\_\_\_\_ NO \_\_\_\_\_ NOT SURE \_\_\_\_\_

2. Have you ever participated in a scientific investigation of your ESP abilities?: YES \_\_\_\_\_ NO \_\_\_\_\_ If yes, give details: \_\_\_\_\_

3. Have you ever participated in a seance or a group meditation:

A. To demonstrate your ESP abilities?: YES \_\_\_\_\_ NO \_\_\_\_\_

B. For someone else to demonstrate their abilities?: YES \_\_\_\_\_ NO \_\_\_\_\_

4. Do you gain some of your impressions through any of these processes?:

Dreams Yes \_\_\_\_\_ NO \_\_\_\_\_ Communion with others Yes \_\_\_\_\_ No \_\_\_\_\_

Visions Yes \_\_\_\_\_ No \_\_\_\_\_ Communion with spirits Yes \_\_\_\_\_ No \_\_\_\_\_

Prayers Yes \_\_\_\_\_ No \_\_\_\_\_ Meditations Yes \_\_\_\_\_ No \_\_\_\_\_

Other processes?: \_\_\_\_\_

5. Through what process do you gain most of your psychic impressions?: \_\_\_\_\_

6. Have you experienced a spiritual event or religious "rebirth"?: \_\_\_\_\_

7. Do you believe in reincarnation?: Yes \_\_\_\_\_ No \_\_\_\_\_

8. Do you believe in the Devil or a god of evil?

Yes \_\_\_\_\_ No \_\_\_\_\_ Undecided \_\_\_\_\_

9. Do you believe elves, fairies, etc. were: Real entities \_\_\_\_\_

Imaginary creatures \_\_\_\_\_ Real only to the viewer \_\_\_\_\_ Just

storybook characters \_\_\_\_\_

10. If YES to any of the following, please give details on the last page. Have you ever:

A. Seen a ghost or spirit?: \_\_\_\_\_

B. Had an out-of-the-body experience?: \_\_\_\_\_

C. Experienced a psychic or religious healing?: \_\_\_\_\_

D. Taken photographs in which persons or objects appeared in the print which were not visible in the scene when the picture was taken?: \_\_\_\_\_

E. Experienced "Automatic writing"?: \_\_\_\_\_

F. Acted as a "Medium": \_\_\_\_\_

G. Found voices on a tape recording which were not heard at the time of recording?(include unexplainable sounds) \_\_\_\_\_

H. Received communications from deceased persons or disembodied spirits (ie. received predictions which later proved true): \_\_\_\_\_

I. Heard voices or sounds through television, radio or telephone which were not part of the broadcast or conversation and could not be explained?: \_\_\_\_\_

## II. Psychic abilities and interests con't.

10. J. Lived in a haunted house?; \_\_\_\_\_  
 K. Experienced a "step back in time"?; \_\_\_\_\_  
 L. Had a poltergeist experience?; \_\_\_\_\_  
 M. Had any experiences you feel are psychic in nature which are not listed above?; \_\_\_\_\_
11. Do you consider your knowledge of Parapsychology (study of ESP) to consist mainly (check one or more) of information from:  
 A. personal interest in ESP events in everyday life?; \_\_\_\_\_  
 B. book, magazine or newspaper accounts of ESP events?; \_\_\_\_\_  
 C. empirical investigations of alleged ESP events?; \_\_\_\_\_  
     reports of investigation \_\_\_\_\_ Participation in \_\_\_\_\_  
 D. Experimental investigations in the laboratory of ESP events; \_\_\_\_\_  
     reports of \_\_\_\_\_ participation in \_\_\_\_\_
12. Have you read books or magazines about the UFO phenomena?; \_\_\_\_\_  
 If yes, what ones?; \_\_\_\_\_  
 If yes, before or after your sighting?; \_\_\_\_\_
13. In what area(s) of ESP are you most interested?; \_\_\_\_\_  
 \_\_\_\_\_
14. Do you feel there is "something to" astrology?; Yes \_\_\_ No \_\_\_

## III UFO PHENOMENA

1. Have you seen an Unidentified flying object?; YES \_\_\_ NO \_\_\_
2. If yes, give Date; \_\_\_\_\_ Location \_\_\_\_\_  
     (incl. nearest town and state)  
     Number of objects seen \_\_\_\_\_  
 Approximate distance from you; Ground distance \_\_\_\_\_  
 Altitude \_\_\_\_\_ Number of witnesses \_\_\_\_\_  
 Size of object (compared to full moon) \_\_\_\_\_
3. Your opinion of what you saw; \_\_\_\_\_  
 \_\_\_\_\_
4. If there were any animals in the vicinity what was their reaction?; \_\_\_\_\_  
 \_\_\_\_\_
5. Are you a member of any organization which gathers information about UFO reports?; YES \_\_\_ NO \_\_\_  
 If yes, please list the organization(s); \_\_\_\_\_
6. Have you had a sighting of a UFO during which you experienced a "loss of time"?; YES \_\_\_ NO \_\_\_  
 If NO, go on to question 8.  
 If yes, are you now aware of the possible events which occurred during that loss of time? YES \_\_\_ NO \_\_\_  
 If NO, go on to question 7.

## III UFO Phenomena con't.

6. If yes, please describe your impressions of the event and possible association with the UFO observation: \_\_\_\_\_  
\_\_\_\_\_
7. Are you interested in the use of hypnotic techniques to help you remember the "loss of time" events? YES \_\_\_\_\_ NO \_\_\_\_\_
8. Have you, prior to or since your sighting, had dreams or experiences that you feel might be related to the UFO phenomena? YES \_\_\_\_\_ NO \_\_\_\_\_  
If No, go on to question 9.  
If yes, give details; before sighting \_\_\_\_\_ after \_\_\_\_\_  
Dreams \_\_\_\_\_  
Experiences \_\_\_\_\_
9. Have any relatives had UFO sightings or psychic experiences before or after your sighting? YES \_\_\_\_\_ NO \_\_\_\_\_  
If No, go on to question 10.  
If yes, give relationship of person(s) \_\_\_\_\_  
UFO sighting \_\_\_\_\_ Psychic experience \_\_\_\_\_  
Approximate date and place \_\_\_\_\_
10. Do you believe that most UFO sightings can be explained by the hypothesis of:
- |   |           |          |
|---|-----------|----------|
| A. "Misinterpretations of known phenomena?" | Yes _____ | NO _____ |
| B. "Psychological phenomena"(imagination)?  | Yes _____ | No _____ |
| C. "Lies or Hoaxes"?                        | Yes _____ | No _____ |
| D. "Government secret weapons"?             | Yes _____ | No _____ |
| E. "Extraterrestrial spacecraft"?           | Yes _____ | No _____ |
| F. "Other-dimensional"?                     | Yes _____ | No _____ |
| G. "Gods and/or devils"?                    | Yes _____ | No _____ |
| H. Other?                                   | _____     |          |
11. What was your opinion of the UFO phenomena before your sighting?  
\_\_\_\_\_  
\_\_\_\_\_
12. What was your emotional reaction at the time of your sighting?  
\_\_\_\_\_  
\_\_\_\_\_
13. Has your life been changed by the sighting? \_\_\_\_\_
14. Have you ever seen the "Bigfoot" creature? Yes \_\_\_\_\_ No \_\_\_\_\_  
If yes, give date \_\_\_\_\_ location \_\_\_\_\_

IV UFO OCCUPANTS

1. Have you had a UFO sighting which included the observation of a humanoid or other UFO occupant? YES \_\_\_\_\_ NO \_\_\_\_\_  
 If No, go on to question 3.  
 If Yes, please give Date \_\_\_\_\_ Location \_\_\_\_\_  
 Time of day \_\_\_\_\_ Number of occupants seen \_\_\_\_\_  
 Distance from you \_\_\_\_\_ Description (physical characteristics, dress, activities, movements, etc.) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Your opinion of what you saw and your emotional reaction \_\_\_\_\_  
 \_\_\_\_\_
2. On the blank sheet please draw a figure(s) to represent the UFO occupants seen.
3. Have you communicated, directly or indirectly, with UFO occupants (seen or unseen)? YES \_\_\_\_\_ NO \_\_\_\_\_  
 If No, go on to Part V.  
 If Yes, did you communicate through Speech \_\_\_\_\_ Writing \_\_\_\_\_  
 Mental communication \_\_\_\_\_
4. If communication by speech:
  - A. Could you see lip movement of the UFO occupant? Yes \_\_\_\_\_ No \_\_\_\_\_
  - B. Was the speech in English? Yes \_\_\_\_\_ No \_\_\_\_\_  
 In another language you were able to recognize? Yes \_\_\_\_\_ No \_\_\_\_\_  
 In a language you did not recognize? Yes \_\_\_\_\_ No \_\_\_\_\_
5. If communication by writing, do you have any written material given to you by the occupants (done by them)? Yes \_\_\_\_\_ No \_\_\_\_\_
6. If communication by mental means, were you told by the occupants how this process was conducted? Yes \_\_\_\_\_ No \_\_\_\_\_  
 If Yes, please explain \_\_\_\_\_  
 \_\_\_\_\_
7. Were any apparent devices (microphones, earphones, etc.) used by the UFO occupants? Yes \_\_\_\_\_ Explain \_\_\_\_\_  
 \_\_\_\_\_ No \_\_\_\_\_
8. What information did you give to the occupants? \_\_\_\_\_  
 \_\_\_\_\_
9. What information did you receive? \_\_\_\_\_  
 \_\_\_\_\_
10. Have you kept any record of these communications? \_\_\_\_\_  
 \_\_\_\_\_

## Questionnaire (Continued)

V IMPRESSIONS

Please use this page and the next to describe in detail your own psychic impressions of UFO phenomena. Include such things as impressions of 1) the UFO itself 2) possible origins 3) powers and/or technology 4) the purposes of UFO occupants or those who control UFOs.

Include a comment on 1) what you think your reaction would be to an announcement that there had been worldwide landings of UFOs and contact with world governments by UFO occupants, 2) general public reaction.

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## THE AUTHORS

## BALLESTER

Mr. Ballester is a labor economics analyst in Valencia, Spain, employed since 1976 by the Ford Motor Company. He is Editor-in-Chief of the journal UPIAR Research in Progress, which is devoted to a scientific consideration of the UFO phenomenon. He has for years specialized in the analysis of UFO landing cases and the development of appropriate methodology for the study of UFOs. He has written widely on the UFO subject, including three books published in Spain.

## BASTERFIELD

Mr. Basterfield was born in England, migrating to Australia in 1968. He has been interested in the scientific investigation of the UFO subject since 1967, with special attention to investigating the role of psychological processes in certain close encounter events. Mr. Basterfield has explored his "Imagery hypothesis" in a number of articles and one book; he has also written extensively on many other aspects of the UFO subject.

## GUASP

Mr. Guasp holds the M.S. degree in physics from the University of Valencia, Spain. He is currently a faculty member at the Colegio Agustinos in Valencia with research interests in relativity and superluminal particles. His interest in the UFO phenomenon is in the area of methodology and the physics of UFOs, and he has written a book with Ballester on UFOs and science.

## HOLT

Mr. Holt received a B.S. degree in physics in 1967 from Iowa State University and a M.S. degree in the physical sciences from the University of Houston/CLE in 1979. He is President of Holt Research and Development Associates. For the past 19 years he has been employed by NASA in Houston where he has been involved with astronaut and flight controller training. He is a founding board member of the Vehicle Internal Systems Investigative Team, Inc. (VISIT) in Houston. His interests in the UFO phenomenon include the analysis of radiation emitted by UFOs and likely propulsion systems used by UFO-like vehicles.

## HOPKINS

Mr. Hopkins is an acclaimed painter and sculptor whose works are in the permanent collections of the Whitney Museum, the Solomon H. Guggenheim Museum, the Hirshhorn Museum, and many others. He began actively investigating UFO sightings in 1975 and since 1977 has devoted his time to an exhaustive investigation of UFO abduction cases. Mr. Hopkins has written and lectured extensively on the UFO subject, and he has written the book Missing Time: A Documented Study of UFO Abductions on the abduction phenomenon.

## HYNEK

Dr. Hynek was for years the preeminent figure in the UFO field before his recent death. He was trained as an astronomer and received his Ph.D. degree from the University of Chicago. He held positions at Ohio State University, the Smithsonian Astrophysical Observatory, and Northwestern University, where he was both chairman of the Department of Astronomy and Director of Dearborn and Lindheimer Observatories.

Dr. Hynek was, from 1949 to 1969, scientific consultant to the U.S. Air Force Projects Blue Book and Sign. He founded the Center for UFO Studies (CUFOS) in 1973 and served as its Scientific Director until 1986. He wrote three books, a great number of articles, and lectured worldwide on the UFO phenomenon.

## JEFFERS

Ms. Jeffers graduated from the Millard Fillmore Hospital School of Nursing in 1953 and worked for nineteen years as an R.N. She also received a B.S. degree in psychology and anthropology in 1976 from the University of Pittsburgh. She has been interested in anomalous phenomena since childhood and has investigated UFO reports since 1948. Ms. Jeffers is particularly interested in the connection between PSI and UFO experiences.

## JOHNSON

Dr. Johnson received a B.A. degree in anthropology from the University of Colorado, Boulder and a Ph.D. degree in quantitative psychology from the University of Washington. He has been employed as a computer programmer and research specialist for a number of organizations. Currently chairman of the Puget Sound UFO Study Group, he has published several papers on the UFO phenomenon. His special research interest is the quantitative analysis of UFO vehicle interference reports.

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Dr. Lawson holds the B.A. degree in English Literature from the University of California at Berkeley and the M.A. and Ph.D. degrees from Stanford University. He is currently a professor of English at California State University at Long Beach. His research interests in the UFO field have long centered about the use and abuse of hypnosis in the investigation of alleged abductions. Dr. Lawson has published several articles on this subject and other topics in the investigation of UFO reports.

## MACCABEE

Dr. Maccabee received his Ph.D. in physics in 1970 from the American University. He is currently employed as a research physicist by the Naval Surface Weapons Center in Maryland. He has authored over two dozen publications and holds several patents. Dr. Maccabee currently serves as chairman of the executive committee of the Fund for UFO Research, Inc. in Washington D.C. He has published numerous articles and book reviews on UFOs. His special interests are analysis of UFO photographs and analysis of historical government documents concerning UFOs.

## MELTON

Dr. Melton was ordained as a United Methodist minister in 1969 and received a Ph.D. in the History and Literature of Religion from Northwestern University in 1975. He is the Director of the Institute for the Study of American Religions and the author of the Encyclopedia of American Religions, published in 1979.

## PINOTTI

Mr. Pinotti, who received a master's degree in political science from the University of Florence, Italy, now works as an executive for FIAT in Florence. He is President of Centro Ufologico Nazionale (CUN), one of Italy's leading UFO organizations, and has served as editor of CUN's publication, Notiziario UFO. Mr. Pinotti has written three books on the UFO subject, published in Italy, as well as several articles and reviews. In 1980 he presented a paper on UFOs before the English House of Lords UFO Study Group.

## RODEGHIER

Mr. Rodeghier holds a B.S. degree in astrophysics from Indiana University and an M.A. degree in sociology from the University of Illinois at Chicago. He is currently completing his Ph.D. in sociology and working as a software and statistical consultant. He has been associated since 1974 with the Center for UFO Studies (CUFOS) in a variety of positions; presently, he is a member of the Board of Directors and holds the position of CUFOS Scientific Director. His UFO research interests are the physical effects allegedly produced by the UFO phenomenon and the response of science and the public to UFO sightings.

## SCHECHTER

Mr. Schechter holds a B.S. degree in engineering from the University of Illinois. He is currently the director of the Midwest Environmental Assistance Center, and his professional work involves the investigation of various aspects of acoustics and noise control. He has also served as past director of the National Noise Assessment for the U.S. Environmental Protection Agency's Office of Noise Abatement and Control.

## SCHUESSLER

Mr. Schuessler is a aerospace engineering manager, employed for many years in Houston by McDonnell Douglas. He has been associated with all major manned U.S. space programs in his work. He is a founding member of the Mutual UFO Network (MUFON) and is currently a member of the Board of Directors and Deputy Director for Administration. Mr. Schuessler is also on the board of the Vehicle Internal Systems Investigative Team, Inc. (VISIT). Since 1967 he has written many articles for various UFO publications. Recently he has devoted his efforts to an in-depth investigation of the well-known Cash-Landrum case.



