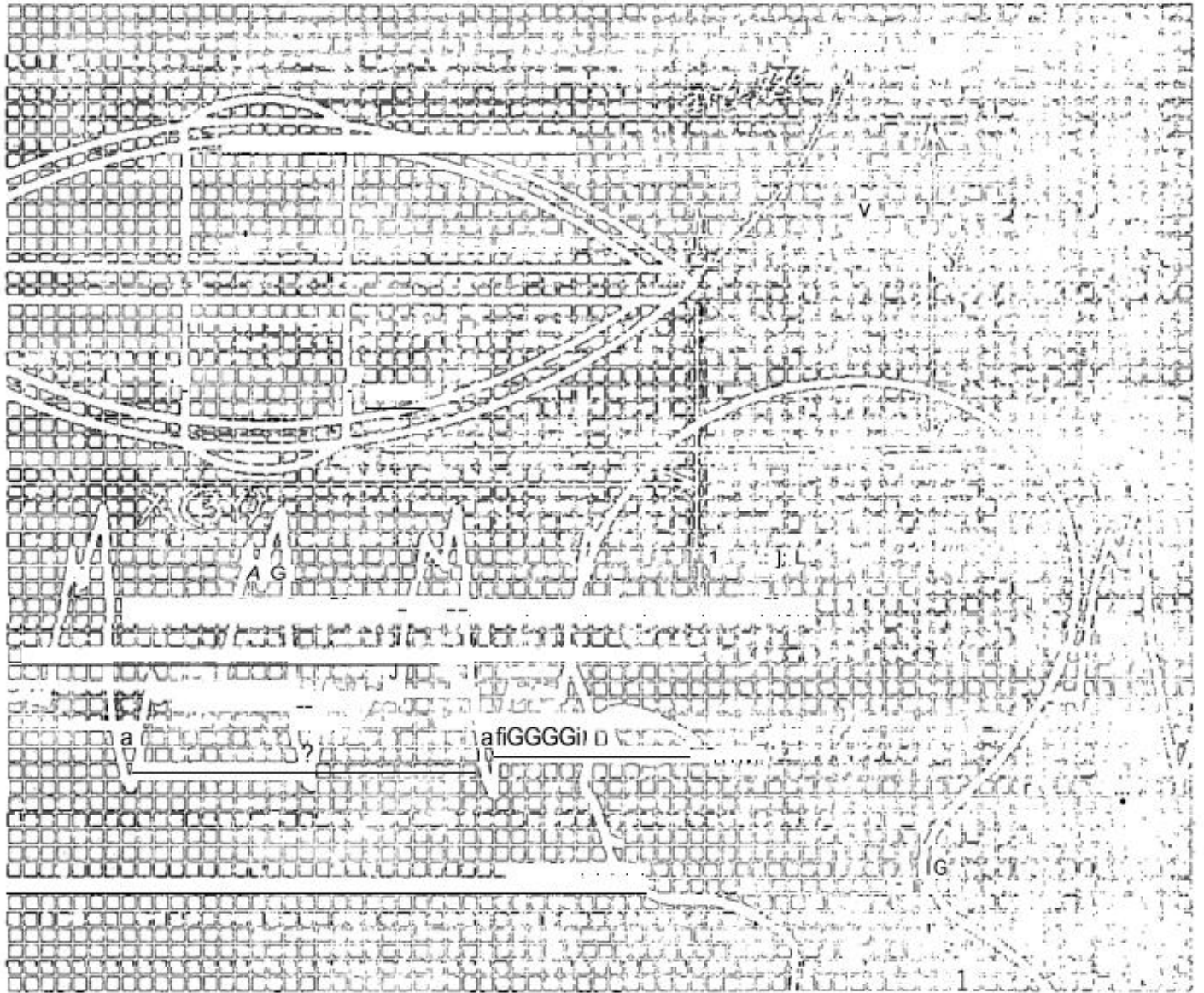


**1980 MUFON
UFO SYMPOSIUM
PROCEEDINGS**

63
UFO

Technology; a detailed examination.



Clear Lake City, Texas

June 6-7-8, 1980

Symposium Theme

UFO TECHNOLOGY

A DETAILED EXAMINATION

Sponsored by Mutual UFO Network, Inc. (MUFON)

Hosted by VISIT

Vehicle Internal Systems Investigative Team

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Eleventh Annual MUFON UFO Symposium

CLEAR LAKE HIGH SCHOOL

CLEAR LAKE CITY, TEXAS

June 7 & 8, 1980

WALTER H. ANDRUS, JR.

Walter H. Andrus, Jr., is the International Director of the Mutual UFO Network, Inc., (MUFON) a worldwide organization dedicated to resolving the phenomenon known as unidentified flying objects. He also serves on the staff of THE MUFON UFO JOURNAL, the official publication of MUFON.

• He is a Production Manager for the Motorola Automotive Products Division Plant in Seguin, Texas. Prior to his present assignment, he was employed in successive capacities as Assistant Plant Manager, Manager of Quality Control, and Operations Manager, during his thirty year tenure with Motorola.



Walt and his wife, Jeanne, reside at 103 Oldtowne Road, Seguin, TX 78155. They are former members of the First United Presbyterian Church in Quincy, Illinois, where Walt served as an Elder for twenty years. Their son, Donald L. Andrus, is an Attorney-at-Law in Harrisburg, Illinois, and a member of MUFON's legal staff. They are the proud grandparents of two lovely granddaughters.

Mr. Andrus has been interested in the UFO phenomenon since August 15, 1948, when he, his wife, and son observed four UFOs flying in formation over downtown Phoenix, Arizona. He was instrumental in founding and organizing the Mutual UFO Network in May 1969, an organization which has grown from the participation of members from a few midwestern states to one of international stature, known throughout the world for its scientific approach, investigative capabilities, international UFO symposiums, and publications.

• Mr. Andrus has presented illustrated lectures to colleges, universities, and civic groups in Illinois, Missouri, Iowa, Texas, Ohio, Oklahoma, Indiana, California, Arkansas and Mexico on UFOs. He has also participated in both national television and radio programs on the subject of unidentified flying objects during the past twelve years.

When the Center for UFO Studies was founded in 1973, MUFON was the only major UFO organization to pledge its support. These two compatible organizations have developed a high degree of cooperation during the intervening years.



MUTUAL UFO NETWORK, INC.

By WALTER H. ANDRUS, JR.

The MUTUAL UFO NETWORK, INC., an international organization, is a not-for-profit corporation, incorporated under the State Laws of Texas, composed of people seriously interested in resolving the mysteries of the UFO phenomenon by combining their mutual talents, research, and investigative efforts. The basic purposes, as exemplified in our Charter, cover the areas of science, research, education, publications, and the social aspects.

MUFON is dedicated to the express purpose of answering four basic questions pertaining to the enigma known as "Unidentified Flying Objects".

1. Are **UFOs** some form of spacecraft controlled by an advanced intelligence, conducting a surveillance of our Earth, or do they constitute some unknown physical or psychological manifestation that is not understood by twentieth century science?
2. If UFOs are found to be extraterrestrial craft controlled by intelligent beings, what is their method of propulsion? Or, if they have developed a technique for operating in another dimension, how is that accomplished?
3. Postulating that they may be controlled by an extraterrestrial intelligence, where do they originate - in our physical Universe or in another dimension?
4. Assuming that some of the craft are piloted by beings (**humanoids, entities**), what can we learn from their apparently advanced science and civilization through study or possibly through direct communications with the occupants of these vehicles that will benefit mankind on the planet Earth?

We are very cognizant that a phenomenon which has baffled the residents of our tiny planet, conceivably for several thousand years, will not be resolved tomorrow, or even next year. However, until a concentrated scientific effort is launched to deal with this perplexing dilemma, it will undoubtedly continue to be "the greatest mystery of our time".

Founded on May 31, 1969, MUFON is proudly entering its second decade of scientific investigation of the UFO phenomenon. The phenomenal success of the Mutual UFO Network may be attributed to the "grass roots" nature of the organization, where a majority of the leadership and motivation is achieved at the local level. Headed by a State or Provincial Director, each state or province is geographically divided into groups of



MUFON Symposium Proceedings

counties, having a State Section Director correlating the investigative efforts of the Field Investigators in each Section. The nucleus of many new State Sections has been an existing and active UFO Study Group, which has merged with MUFON, but retained its local identity. Since the Field Investigators comprise such an important segment of MUFON, a copyrighted "Field Investigator's Manual" was first published in December 1971, to provide guidelines, techniques, and suggestions to members conducting UFO sighting interviews and investigations. An expanded and revised second edition, edited by Raymond E. Fowler, MUFON Director for **Investigations**, was released in 1975. The cost of the manual is \$2.00 for current MUFON members and \$4.00 to all others.

Since we are dealing with a worldwide phenomenon, we must consider its international scope. We are very cognizant that there are many reputable UFO organizations throughout the world who are performing a similar function to MUFON in their own countries. Therefore, MUFON through its International Coordinator, has appointed Foreign Liaison Representatives in these nations to provide liaison between MUFON and their federation, society, or organization to exchange and share UFO data. In some countries, MUFON has established a national section headed by a National Director. Due to the need for prompt communications with our Foreign Liaison Representatives and National Directors, the world has been divided geographically into eight areas of responsibility, each administered by a Continental Coordinator, who reports directly to the International Coordinator.

The administration of the Mutual UFO Network is the responsibility of the Executive Committee, composed of the International Director, the Deputy Director for Administration, and the Deputy Director for Business Management. They are assisted by a competent staff to serve the needs of the state, provincial, and national organizations. Nationally known Consultants, most of whom possess doctorates, are readily available as an advisory group to apply their expertise to UFO cases under study and to conduct advanced research in their respective fields. The research activities of the Advisory Board of Consultants is coordinated by the Director of Research. MUFON is governed by a Board of Directors composed of fifteen (15) men and women, which includes the Corporate Officers, four elected Regional Directors, and the Directors of the major functional activities.

Three Amateur Radio Networks, operating weekly in the 20, 40 and 75 meter amateur radio bands using single side band **communications**, are utilized to receive and disseminate UFO sighting reports and current UFO information. The exact date, time, and frequencies are published in THE MUFON UFO JOURNAL. A master **file**, containing all submitted UFO sighting reports, arranged chronologically by state, province, and country, is maintained in the MUFON administrative offices.

Astronomy and the study of the UFO phenomenon have been at times almost synonymous. MUFON has direct member relationship with amateur astronomy clubs and societies as another means of identifying unusual anomalies in our skies. As in the case of the Amateur Radio Network, each State Astronomy Group has a Director coordinating its activities.



MUFON Symposium Proceedings

Since 1970, one of the major activities of MUFON has been the sponsorship of an annual international MUFON UFO SYMPOSIUM, where internationally known scientists, engineers, and authors lecture on their particular specialization or contributions to resolving this perplexing scientific dilemma. In order to provide a permanent record of the presentations, the copyrighted proceedings are published annually for worldwide distribution prior to the symposium.

MUFON, through its vast network of State Directors, Provincial Directors, State Section Directors, Consultants, Staff, and Field Investigators, has volunteered its support and cooperation to the CENTER FOR UFO STUDIES as a field **investigating team**. CUFOSS is a free association of scientists, engineers, and other professionals under the direction of Dr. J. Allen Hynek, former Consultant to the United States Air Force on Unidentified Flying Objects. Since the goals and objectives of MUFON and the CENTER FOR UFO STUDIES are compatible, the two organizations complement each other.

In order that only qualified, competent, and sincere people may become involved, membership in MUFON is by invitation of one of the Directors previously named. As an organization, MUFON firmly believes that concentrated and continuous scientific study by dedicated researchers in various related fields will provide the ultimate answer to the UFO enigma. Since a sincere interest in resolving the UFO phenomenon is a prime requirement for membership, many diversified categories of positions are available. They are Consultant; State, Provincial, or National Director; Foreign Liaison Representative; State Section or Provincial Section Director; Field Investigator; Research Specialist; Amateur Radio Operator; Astronomy; Field Investigator Trainee; Translator, and UFO News Clipping Service. For those people who support the activities of MUFON and desire to have a subscription to THE MUFON UFO JOURNAL, but do not want to participate actively in UFO investigations and research, they may join as a Contributing Subscriber.

THE MUFON UFO JOURNAL (formerly SKYLOOK, founded in 1967), the official monthly publication of the MUTUAL UFO NETWORK, is our most significant means of sharing details of UFO sighting reports and vital information related to the phenomenon with our members throughout the world. THE MUFON UFO JOURNAL has established itself as one of the leading UFO magazines in the World today and the foremost monthly publication.

The annual MUFON membership dues of \$15.00 in the U.S.A. and \$16.00 for foreign members includes a subscription to the monthly magazine. Since MUFON is basically an adult organization and a Field Investigator must be at least 18 years of age, a special student membership of \$12.00 is available for those people who are 17 years of age or younger, with applicable assignments.

A membership identification card will be issued to each MUFON member upon approval of the "Application for Membership" form and receipt of annual dues. If a membership application is not approved when submitted, the annual dues will be immediately refunded.



All applications for membership, JOURNAL subscriptions, renewals, publications, etc., should be mailed to MUFON, 103 Oldtowne Road, Seguin, Texas 78155 USA. Since the study of the UFO phenomenon is frequently a family affair, members in the same family; that is, identical home addresses, may elect to receive only one copy of THE MUFON UFO JOURNAL each month. When one member in the family subscribes at the regular \$15.00 dues (\$16.00 foreign) rate, additional people in the same family may be MUFON members for only \$4.00 each if they so designate when submitting their dues. A sample copy of THE MUFON UFO JOURNAL may be purchased for \$1.50.

If you are interested in helping to resolve the UFO phenomenon, which has been potentially identified as "the greatest mystery of our time", you are invited to volunteer your services and talent to the Mutual UFO Network - the fastest growing UFO investigative organization in the world today. Join now, and become an active contributor to the resolution of this baffling enigma and the scientific progress of MUFON as we begin our second decade in the study of UFOlogy.



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He has been very active in the UFO field. John is the MUFON Deputy Director of **Administration**, Staff Member of the MUFON UFO JOURNAL and author of the column "UFO Tech Notes", President of Vehicle Internal Systems Investigative Team (**VISIT**), Editor of "Potpourri News", Symposium Chairman for the 1980 MUFON UFO Symposium, Member of the National Enquirer UFO Mini-Panel, and Lecturer. Mr. Schuessler is one of the founding members of MUFON and initially served as State Director for Missouri.



He may be contacted by writing to P.O. Box 58485, Houston, TX 77058.

L. DAVID KISSINGER

L. David Kissinger is a **Sys-**tems Engineer in Environmental and Thermal Systems at the NASA Lyndon B. Johnson Space Center. He designs, tests, and analyzes space suits and spacecraft environmental control systems. Born in 1949, **Mr.** Kissinger received a **B.A.** in Chemical Engineering from Cleveland State University in 1970 and a **M.S.** in Chemical Engineering from Rice University (Houston, TX) in 1976.

David is one of the founders of Project VISIT and now serves as the Secretary and Treasurer. He is the MUFON State Section Director for Harris and **Galveston** Counties and is a member of APRO. **David's** lovely **wife** is also employed at NASA as a Quality Control Analyst. They reside at 906 Tall Pines, **Friendswood, TX 77546.**



PROJECT VISIT -

AN APPROACH TO DETERMINE "WHAT ARE THEY?"

L. DAVID KISSINGER

JOHN F. SCHUESSLER

The host group for the 11th annual MUFON UFO Symposium is Project VISIT. VISIT is a space age type acronym that stands for Vehicle Internal Systems Investigative Team. As the name implies, VISIT is a project type group and not a popular membership organization like MUFON, CUFOS, APRO or other organizations. VISIT is a nonprofit corporation consisting of volunteers from the Houston/Clear Lake City area having the common goal of doing more about the UFO phenomenon. The group was inspired by the NASA operation at the Johnson Space Center where Projects Mercury, Gemini, Apollo, Skylab, and Space Shuttle have been successfully carried out using the project type approach.

VISIT members usually have two goals in mind. First is the common goal of successful project operation and each contributes to that goal. The second is the personal research goal of each member. Hopefully the group contributes to the individual goal and even enhances the chances of personal success. VISIT members are seeking consistent, correlative data from close encounter and abduction cases. Working from the baseline of not trying to prove that a given case actually occurred (lots of other people are already arguing both **sides**), VISIT analysts are seeking clues from a number of cases to construct a technological model of what is happening in the field.

The primary focus of the VISIT effort is an engineering and scientific study of the internal systems of the apparent craft involved in UFO or flying saucer reports; with a secondary interest in the physiology of the beings which occupy these vehicles.

As in any scientific endeavor one must be able to replicate the experiment or case and then seek answers by carefully manipulating variables. To put close encounter and abduction cases into this context, it is necessary to consider a basic set of elements that can be repeatedly addressed. For VISIT purposes, the following elements are considered important: 1) baseline date, 2) the **witnesses**, 3) the vehicle, 4) the beings, and 5) post-incident investigation.

The data base is generated from transcripts of investigative data supplied by case **investigators**, scientists, psychologists, organization **consultants** and other reputable sources. **Included** is the packet of **first hand report information** gained from direct contact with the witness, critique of interim results by the witness and recognized consultants, physical evidence of the event such as medical examination **re-**sults and physical trace evidence such as **that** presented by Fred Merritt.

The objectives of this research are to 1) determine if there is a correlation of scientific and engineering data from case to case, 2) identify internal systems which are most prevalent, 3) evaluate the purpose for these **systems**, 4) determine how these systems **operate**, and 5) share the information obtained on these USVs (Unknown Space Vehicles) with the public.

Baseline data establishes the basis for comparison of the cases. The VISIT, format is contained in a unique computer case **input form** that is designed to utilize the inputs whether from technical sources or non-technical sources. We want the information to be available for comparison, a task that takes place after the input form is completed (i.e. figure 1). This form seeks not only the usual time, place, and **weather** information, it looks for more subtle elements as well. For **instance**, what does the witness consider a normal environment (i.e. figure 2). This baseline must be established in order for the detailed case data to be compared on an equivalency basis.


| | |
|--|---|
| COMPUTER CASE INPUT FORM |  |
| ENVIRONMENTAL CONDITIONS: | Vehicle Internal Systems Investigative Team |
| A. () WARM () HOT () COLD () CHILLY () | |
| B. () LIGHT WIND () GUSTY WIND () GALE WIND () CALM | |
| C. () CLEAR () HAZE/SMOKE () BROKEN CLOUDS () SCATTERED CLOUDS () | |
| () OVERCAST () FOG/MIST () RAIN () SLEET () SNOW | |
| D. () HIGH HUMIDITY () MEDIUM HUMIDITY () LOW HUMIDITY | |
| E. { } DAYLIGHT () NIGHT-STARLIGHT () NIGHT-MOON { } NIGHT-DIFUSE CITY LT () NIGHT-BLACKOUT () DUSK | |

Figure 1: SAMPLE BASELINE DATA INPUT SECTION

VEHICLE AIR CONDITION:

A. HUMID VERY HUMID DRY COMFORTABLE
 FOGGY

B. HIGH AIR FLOW MEDIUM AIR FLOW NO AIR FLOW DRAFT
 LOW AIR FLOW

C. WARM HOT COLD CHILLY

D. FLOW FROM FLOOR FLOW FROM WALL FLOW INDETERMINATE
 FLOW FROM CEILING

Figure 3: VEHICLE ATMOSPHERE
CONDITION

PHYSIOLOGY OF THE BEING(S)

NUMBER OF BEINGS _____ LIVING MECHANICAL (BOTH)

| HEAD AREA | DESCRIPTION | NO. | BODY AREA | DESCRIPTION | NO. |
|------------------|-------------|-----|-----------|----------------|-----|
| HEADSHAPE | ----- | --- | TORSO | ----- | --- |
| MOUTH | -----" | --- | ARMS | ----- | --- |
| EYEBROWS | -----" | --- | DIGITS | ----- | --- |
| EYES | -----" | --- | LEGS | ----- | --- |
| NOSE | -----" | --- | HANDS | -----" | --- |
| TEETH | -----" | --- | OTHER | ----- | --- |
| NECK | -----" | --- | HEIGHT | Feet _____ In. | --- |
| CHIN | -----" | --- | WEIGHT | Pounds | --- |
| OTHER | -----" | --- | | | --- |

Figure 4: PHYSIOLOGY OF BEINGS

The post-incident period for the witness is extremely important to VISIT. It is during this part of the case that "proofs" can be gained or lost. VISIT experts advise the witness to seek immediate medical and psychological help. Often some form of burn or skin irritation is present immediately following the event. Any physiological disorders should be treated properly and the information preserved for future analysis. Preserving the condition means to have a thorough medical report generated and photographs of the conditions made. Verbal reports taken during the post-incident period should include the use of tools such as hypnotic regression, voice stress analysis, lie detector, and psychological inventories.

VISIT respects the wishes of individuals and organizations for security of the information received from these cases. The most desirable situation is one of openness and free flow of information. Sometimes the witness is afraid of ridicule and mistreatment, making it necessary to restrict some of the information. Many individuals are so interested in getting a story or shooting down a case that they ignore the rights of the individual. At other times the information is restricted because the case is owned by an organization that wants to sell it in some manner. In either case, VISIT is interested only in accumulation and iteration of the data; therefore VISIT works many cases and feeds the information back to the individual or organization without fanfare of public release.

One specific goal of VISIT is to foster a new interest in professional courtesy in the UFO field. Traditionally, the term professional courtesy has been used to designate gratis services among those who practice medicine. I think the meaning of the term should be broadened. Even though engineers and scientists may not perform free services for one another the same way physicians do, they also need a form of professional courtesy. I am speaking of a public demonstration of mutual respect for one another.

No individual possesses infinite wisdom or has been endowed with universal knowledge. Therefore, exhibitions of professional arrogance are unwarranted and should not be tolerated. Yet public indignities and discourtesies do occur, such as the calculatedly embarrassing question addressed to a speaker and the patronizing or flippant response to a legitimate question.

Professional courtesy should not be a ritualistic repetition of "please" and "thank you", but an expression of respect, at least an honest acknowledgement of the ideas, labors, or even the basic individuality of others. A willingness to listen, especially when others appear wrong, is an integral part of communication: it should be practiced among professionals as a matter of course. No idea or audience should be written off without adequate communication.

Some of the specific areas of specialization in the VISIT organization are medical effects (to be covered in a later presentation by Dr.

Richard Niemtow), detection systems by Al Pennington, advanced propulsion by Alan Holt (under discussion in the propulsion workshop), humanoid, anthropomorphic characteristics by Don Tucker, spacecraft system by Dave Kissinger, and spacecraft operations by John Schuessler. There are many other individual interests, as well and these are blended into the modis operandi of VISIT.

The understanding of human physiology and the design of systems to fit the human is key to the VISIT effort. A good reference source for this material is the MIL-STD-1472B Human Engineering Design Criteria for military systems, equipment and facilities. The NASA Bioastronautics Data Book is another reference required to start the evaluation.

In designing space systems we take into consideration the basic dimensions of the human being. Human factors experts have compiled a set of data that defines the dimensions for men and women from small to large in size. Our systems when designed take into consideration each of these established conditions. For example, a pilot, when seated, can reach a certain distance in all directions to actuate controls and operate his/her craft. Figure 5 shows one such set of dimensions.

VISIT is using this information in reverse in order to take the observed interior size, shapes, and distances; comparing the humanoid anthropomorphic data gained, and then making a determination if the set up is at all possible. For instance, if the humanoid is 3'5" tall and the seat height and instrumentation panel dimensions are correct only for a 6'0" tall pilot, then it would be quite evident that that creature did not fly the craft. In a similar manner the dimensions for the controls of the vehicle such as pushbuttons must be consistent with the physiology of the humanoid. From the works of Webb, Bloecher, and Stringfield we have information on humanoid size and shape including finger and hand configurations. Sample data for pushbutton design for our systems and controls are given in Figure 6.

In like manner we know the oxygen uptake requirements for humans, impact resistance, effects of weightlessness, dynamic pressures, heat rejection mechanism and capability, effects of noise, visual range as well as many other physiological information given by the NASA Bioastronautics Handbook. All these factors are utilized and considered in each abduction and close encounter case.

As mentioned earlier, VISIT is not trying to prove the validity of each abduction case. Instead we feel that if there are real and frequent occurrences of abductions of humans by UFOs, then the abductees will retain information about the UFO engineering systems as well as information about the abductors. By studying a large number of cases, descriptions of similar engineering systems should begin to emerge.

The premise contains the necessary assumption that the occupants of the USVs (Unknown Space Vehicles) who undertake abductions of humans would endeavor to acquire information from more than one abduction.

TABLE XI. STANDING BODY DIMENSIONS

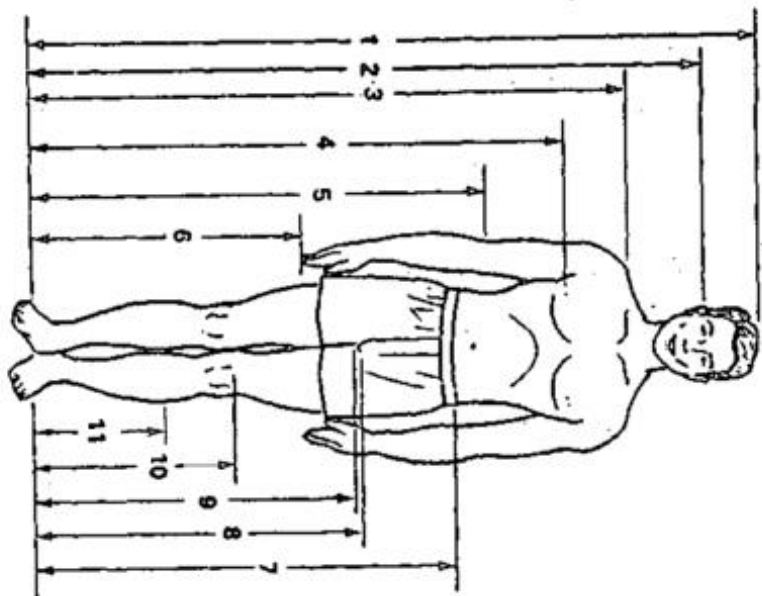
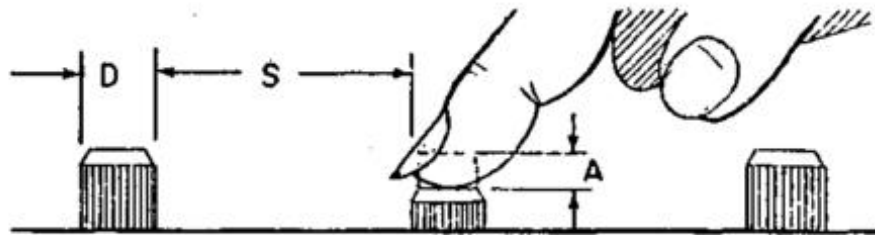


Figure 5: STANDING BODY DIMENSIONS

| MIL-STD-147E 31 December 1974 | PERCENTILE VALUES IN INCHES | | | | PERCENTILE VALUES IN CENTIMETERS | | | |
|----------------------------------|-----------------------------|----------|-----------------|---------------|----------------------------------|-------|-----------------|----------|
| | 5th PERCENTILE | | 95th PERCENTILE | | 5th PERCENTILE | | 95th PERCENTILE | |
| | GROUND TROOPS | AVIATORS | WOMEN | GROUND TROOPS | AVIATORS | WOMEN | GROUND TROOPS | AVIATORS |
| WEIGHT (lb) | 120.8 | 183.1 | 102.3 | 201.9 | 511.6 | 148.6 | | |
| STANDING BODY DIMENSIONS | | | | | | | | |
| 1 STATURE | 52.6 | 54.5 | 60.0 | 78.1 | 78.9 | 55.0 | | |
| 2 EYE HEIGHT (STANDING) | 59.8 | 59.9 | 52.2 | 68.2 | 69.2 | 58.0 | | |
| 3 SHOULDER (ACROMIALE) HEIGHT | 52.6 | 52.5 | 48.4 | 67.7 | 62.9 | 55.4 | | |
| 4 CHEST (NIPPLE) HEIGHT | | 47.5 | 49.3 | | 54.6 | 50.1 | | |
| 5 ELBOW (RADIALE) HEIGHT | | 41.3 | | | 47.2 | | | |
| 6 FINGERTIP (DACTYLION) HEIGHT | | 24.2 | | | 28.8 | | | |
| 7 WAIST HEIGHT | 38.4 | 88.4 | 30.6 | 45.8 | 46.1 | 43.4 | | |
| 8 GROIN HEIGHT | 30.0 | 29.4 | 20.1 | 35.1 | 35.2 | 32.0 | | |
| 9 BUTTEAL FURROW HEIGHT | 19.7 | 28.4 | 20.1 | 38.1 | 34.7 | 31.9 | | |
| 10 KNEECAP HEIGHT | 12.2 | 18.4 | | 15.0 | 22.8 | | | |
| 11 CALF HEIGHT | 28.5 | 28.8 | 26.6 | 35.8 | 34.3 | 31.7 | | |
| 12 FUNCTIONAL REACH, EXTENDED | | 39.4 | | | 80.8 | | | |
| 13 FUNCTIONAL REACH, EXTENDED | | | | | | | | |
| WEIGHT (kg) | 57.4 | 60.4 | 46.4 | 91.6 | 95.0 | 76.5 | | |
| STANDING BODY DIMENSIONS | | | | | | | | |
| 1 STATURE | 158.8 | 164.2 | 152.4 | 195.5 | 197.7 | 172.2 | | |
| 2 EYE HEIGHT (STANDING) | 152.1 | 152.1 | 142.7 | 178.9 | 175.2 | 160.1 | | |
| 3 SHOULDER (ACROMIALE) HEIGHT | 188.6 | 189.8 | 123.0 | 154.2 | 154.8 | 143.4 | | |
| 4 CHEST (NIPPLE) HEIGHT | | 120.8 | 110.0 | | 138.5 | 127.3 | | |
| 5 ELBOW (RADIALE) HEIGHT | | 104.8 | | | 120.0 | | | |
| 6 FINGERTIP (DACTYLION) HEIGHT | | 81.5 | | | 73.2 | | | |
| 7 WAIST HEIGHT | 97.5 | 87.6 | 82.1 | 115.2 | 117.2 | 115.1 | | |
| 8 GROIN HEIGHT | 76.3 | 74.7 | 66.2 | 91.8 | 92.0 | 81.4 | | |
| 9 BUTTEAL FURROW HEIGHT | | 74.5 | 66.4 | | 89.1 | 76.4 | | |
| 10 KNEECAP HEIGHT | 47.5 | 46.8 | | 58.6 | 57.8 | | | |
| 11 CALF HEIGHT | 31.1 | 30.9 | | 40.6 | 38.3 | | | |
| 12 FUNCTIONAL REACH, EXTENDED | 72.7 | 79.1 | 67.7 | 80.9 | 87.0 | 80.4 | | |
| 13 FUNCTIONAL REACH, EXTENDED | | 82.8 | | | 87.3 | | | |



| | DIMENSIONS | | RESISTANCE | | DISPLACEMENT |
|------------|----------------------------|---------------------------------------|------------------------|---------------------------------|------------------------------|
| | Diameter ρ | | | | A |
| | Fingertip Operation | Thumb or Heel of Hand Operation | Fingertip Operation | Little Finger Operation | Thumb or Finger Operation |
| Minimum | 0.385" (10mm) | 0.75" (19mm) | 10 oz (2.8N) | 5 oz (1.4N) | 0.125" (3mm) |
| Maximum | 0.75" (19mm) | | 40 oz (11.0N) | 20 oz (5.6N) | 1.5" (38mm) |
| SEPARATION | | | | | |
| S | | | | | |
| | Single Finger Operation | Single Finger Sequential Operation | | Operation by Several Fingers | |
| Minimum | 0.5" (13mm) | 0.25" (6mm) | | 0.5" (13mm) | |
| Preferred | 2.0" (50mm) | 1.00" (25mm) | | 0.5" (13mm) | |

Figure 6: PUSHBUTTONS - FINGER OPERATED (MIL-STD-1472B)

What type of scientific and engineering data can be obtained from the observations of an abductee while he is under the trauma of an encounter with a USV? Even with scientific and engineering information which could be acquired, how would a randomly picked member of the public recognize and remember such information? The answers to these questions depend on the case and on each individual involved in that case. Each person has a unique history of experiences which will more or less prepare him or her to remember the characteristics of the USV equipment and of the occupant. The capability and training of the interviewer is a crucial factor for obtaining meaningful data. VISIT hopes to lend our expertise to researchers such as APRO's Dr. Leo Sprinkle to obtain the maximum amount of scientific and medical information from abduction cases.

What type of engineering data are obtained from abduction cases?

To answer this question, a review of the type of information that can be obtained will be made by walking through our own spacecrafts.

As our fictitious abductee approaches the 20 foot diameter by 70 foot long cylinder, he observes multiple objects within (figure 7). There are 6 foot long by 3 foot diameter cylinders, the end of which is rounded and a small tube penetrates the end. The characteristics of these objects imply that they may store pressurized fluids. The fluids may or may not be fuel. As the abductee floats into the entrance of the vehicle (figure 8), he notices that there is equipment around the total of the tunnel wall. There is no walk way, steps, or ladder indicating that an antigravity force is maintained or that the vehicle is used in outerspace only. Upon entering the vehicle one notices an occupant (figure 9). This occupant has 2 eyes, a nose, a mouth, 2 ears, 2 arms, 4 fingers, and a thumb on each hand, is 5 feet 8 inches tall and appears to be human in all aspects. This occupant is seated at a table and is eating some pudding like food. Containers of food are floating indicating the lack of gravity. In the background, one of many cabinets for storage of the provisions essential for long duration space travel can be seen. The round window (figure 10) has many layers of glass and is similar to that found in an airliner. This type of window can be expected when the craft has a higher or lower cabin pressure than the outside atmosphere. The floor (figure 11) is a thin wire grid which would be inadequate support in an earth gravity. On the floor is an air vent indicating that the occupants require life support systems. A second occupant is sleeping in a sleeping bag (figure 12). Voices can be heard over a speaker (figure 13) which awakens the occupant indicating that these beings communicate audibly. In a second room, a medium pitched hum originates from a box (figure 14) which has ducts connected to it. The ducts lead to an air vent at the top of the large room (figure 15). Also at the top is a hatch which does not have steps leading to it. Light is provided by florescent fixtures. The light is white. A control panel is seen which has many switches which are protected from accidental activation by guards (figure 16).

It would not be a problem for our abductee to fit his fingers between the guards and activate a switch. This indicates that the occupant's digits are approximately the same size as his own. There are many words in english on the control panels and on an information panel.

Our abductee has a medical exam performed on him. He has his body from his waist down placed into a cylinder. A rubber gasket at the end of the cylinder fits snugly against his waist. Suddenly he feels his lower body swell and his skin becomes warm. His heart begins to beat faster and he feels slightly flush. His cardiopulmonary system has just been tested under test conditions required in a zero gravity.

The equipment described above are parts of the ISV (Identified Space Vehicle; known as Skylab and our fictitious occupant is a manikin portraying an astronaut.

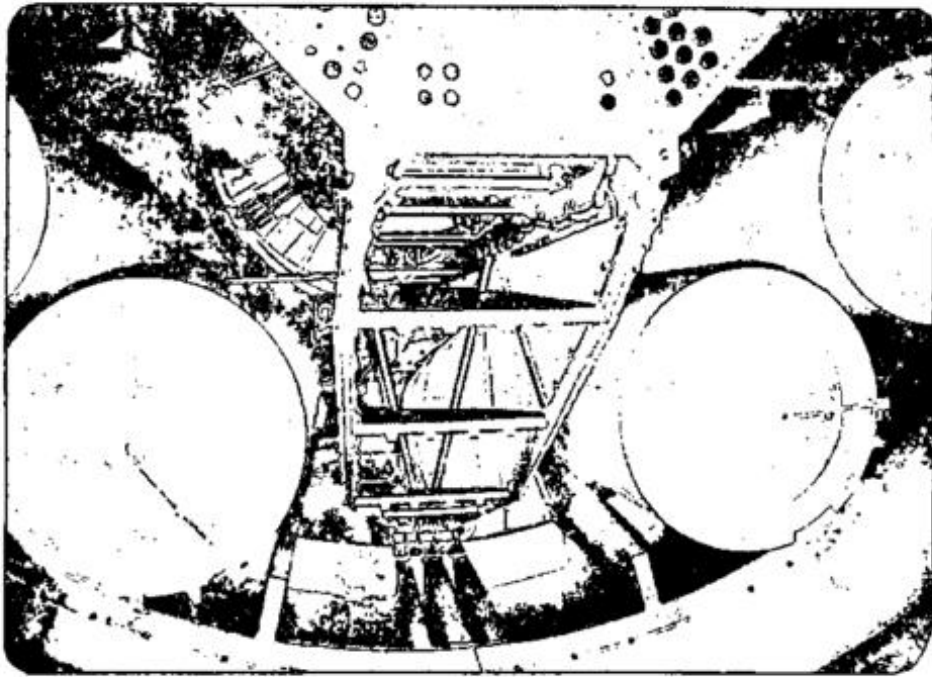


Figure 7: CYLINDERS AT VEHICLE ENTRANCE

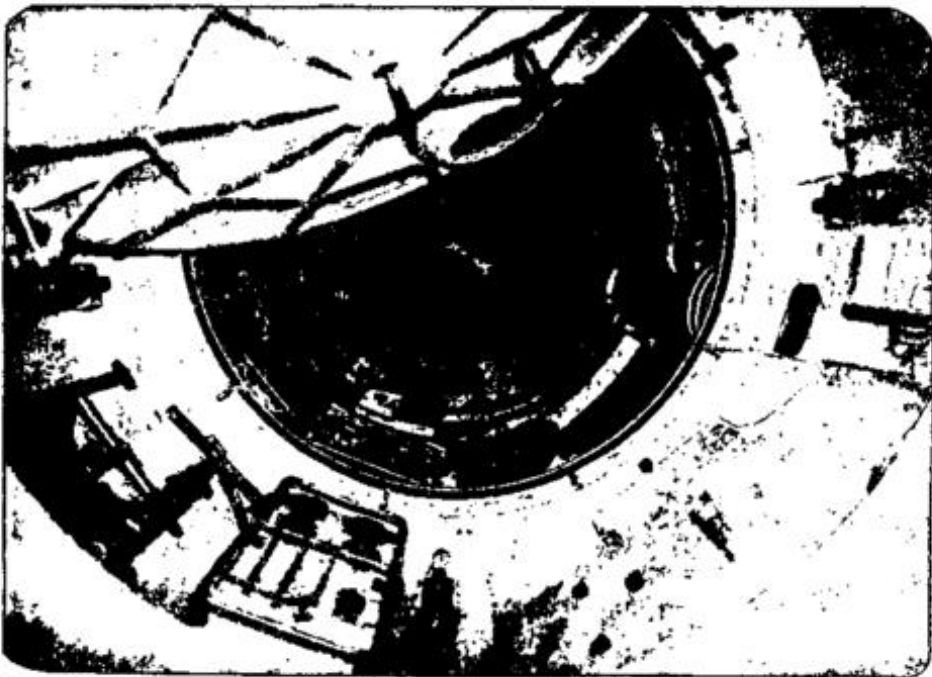


Figure 8: ENTRANCE TUNNEL WITH HATCH



Figure 9: VEHICLE OCCUPANT

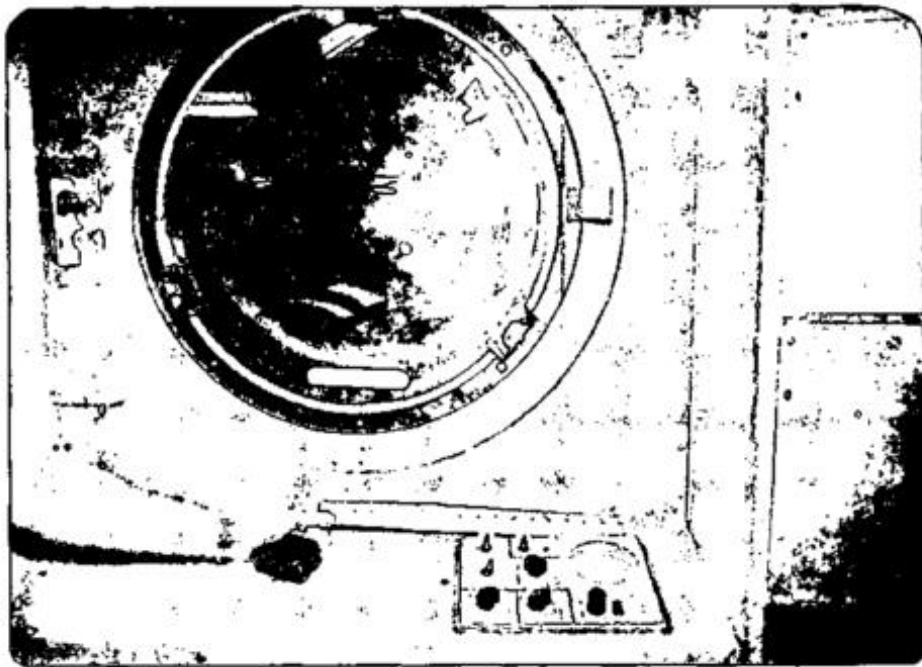


Figure 10: ROUND WINDOW

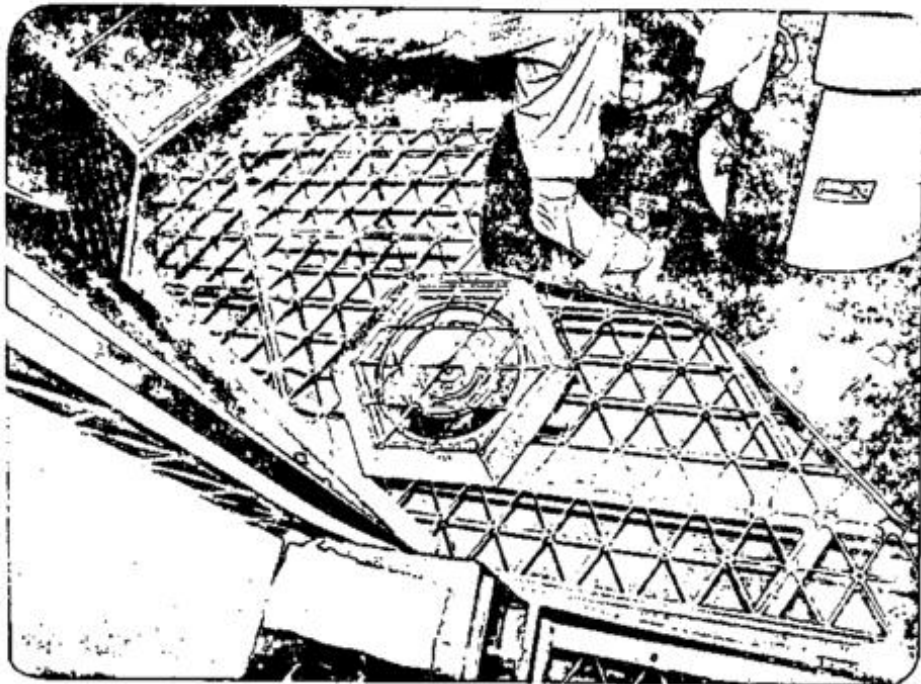


Figure 11:

THIN WIRE GRID FLOOR

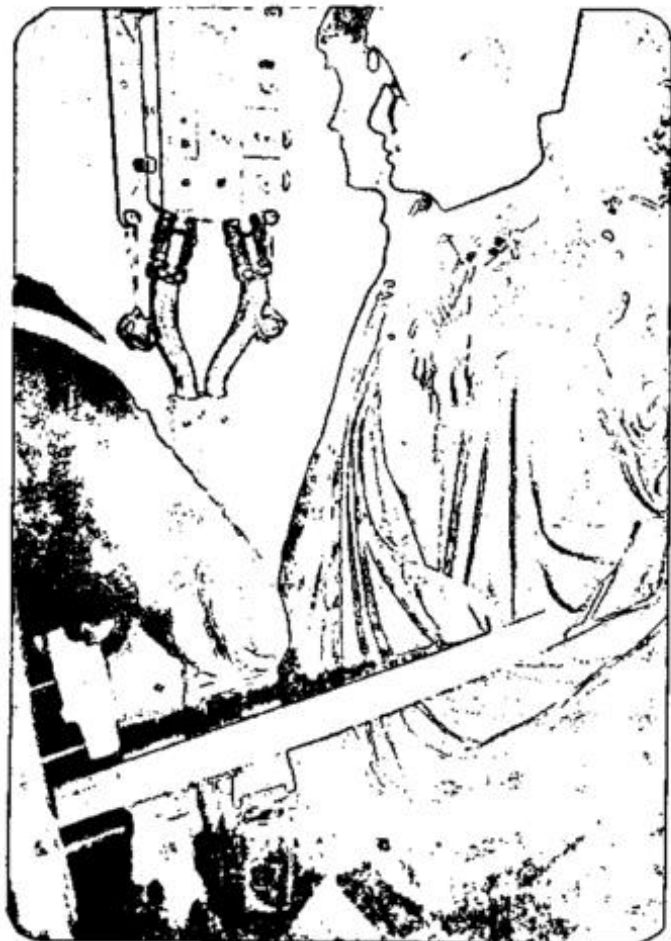


Figure 12: OCCUPANT IN SLEEPING
QUARTERS

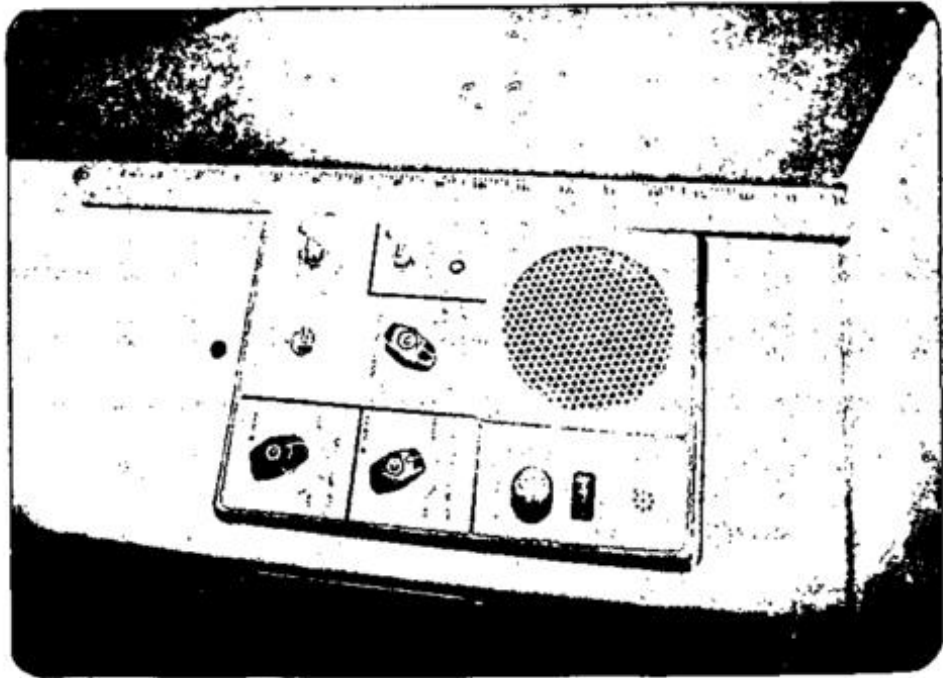


Figure 13:

COMMUNICATIONS SYSTEM
SPEAKER UNIT

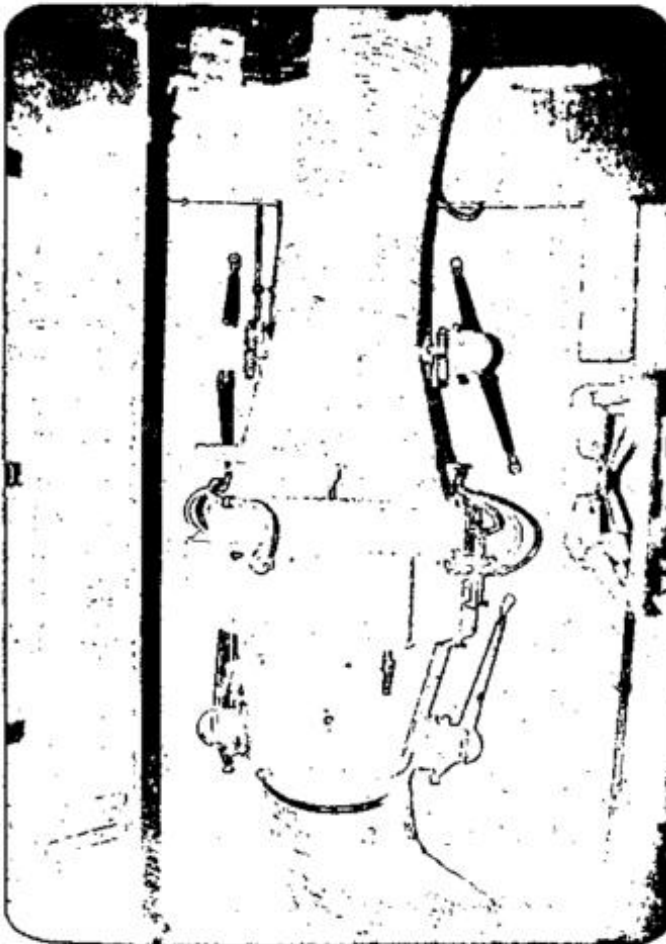


Figure 14: FAN UNIT WITH DUCTS

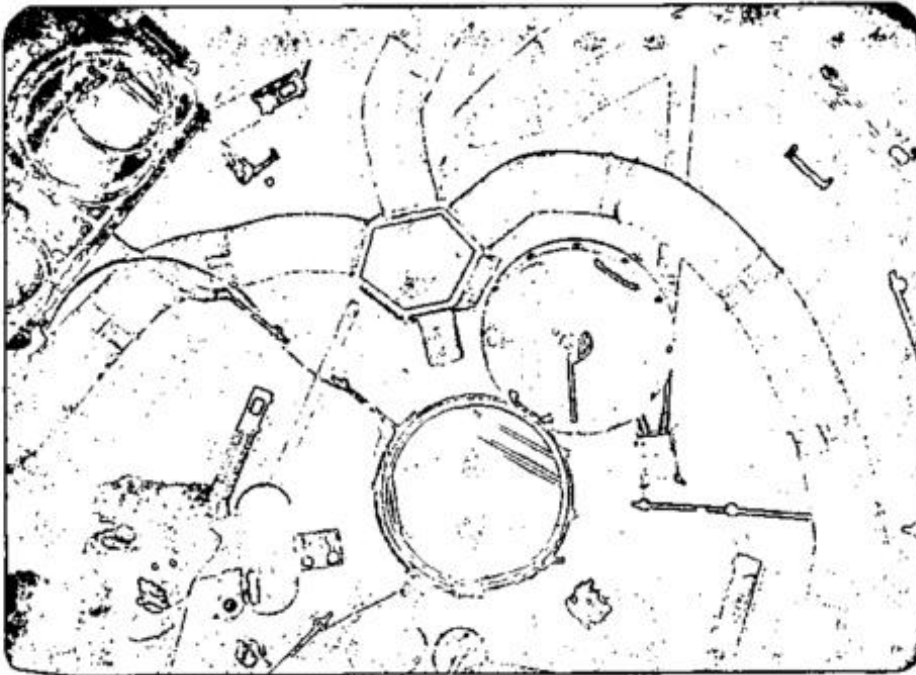


Figure 15: HATCH WITHOUT LADDER

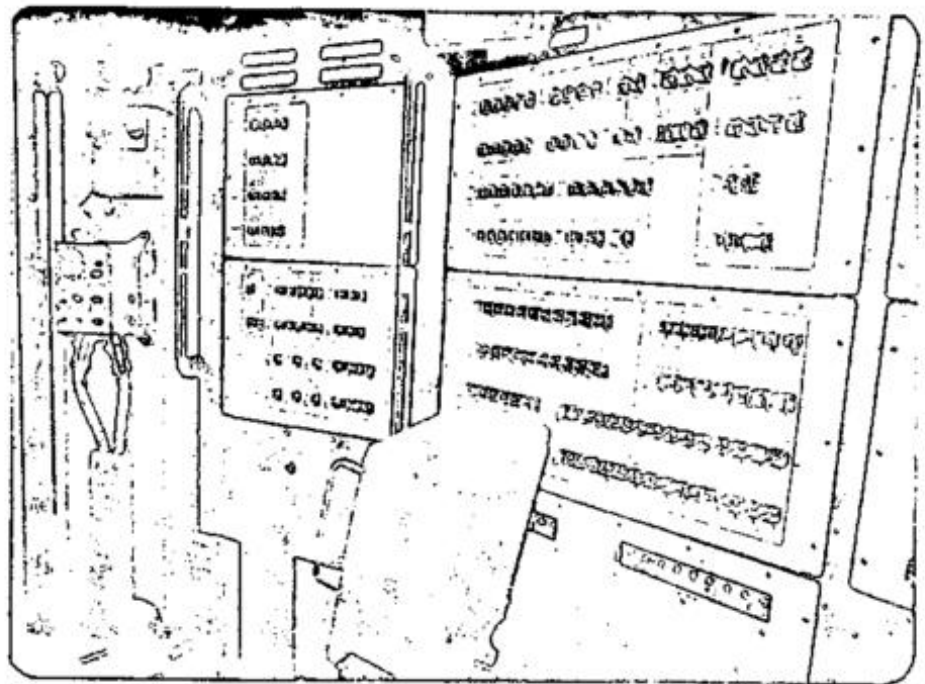


Figure 16: CONTROL PANEL

To return our fictitious abductee, he is taken through a tunnel and placed in a strong metal seat. Seat belts are used to strap him into the seat. The occupant places his hand on a handle that has a rubber bellows at the bottom similar to that found on the bottom of an automobile gear shift. The hatch is closed and soon gravity can be felt again. After awhile he feels acceleration forces and he notices that when the occupant moves the handle the vehicle moves in different directions. Our fictitious abductee has just taken a ride in the Apollo spacecraft which was designed for operation in a gravity field.

More detailed hardware descriptions than that presented above are within the capability of most Americans. A wealth of information about the technology of a USV can be obtained from such descriptions. A description of the lack of such hardware is equally important. The equipment in the spacecraft described above was developed with early 60s technology. Early 70s technology can be seen in the remote controls of televisions sold today. The differences in controls associated with 10 years of development is significant. A peek at the differences which must be present between the interior of USVs and our ISVs may be available through the observations of abductees. Here a note is important. The inability of an abductee to describe anything about the interior while having a vivid recollection of other details may be cause for suspicion as to the occurrence of a real incident.

At this point we will offer some quotes from actual abductees that exemplify what we look for as consistency between the descriptions of vehicle interiors, and the humanoids. To protect the individuals involved we will not identify the individuals or the locations of their abductions.

The first example is taken from a 1974 abduction of two people. One said: "Then we found we were in a giant room, but still in the car. The room was painted a restful gray—I remember there were two or three tall beings in the room, and suddenly I was standing next to them. They were about seven feet tall. At one end of the room there was a chair about my size. All the rest of the furniture was bigger because the people were so tall." Other details are available in this case and most are consistent.

From a 1979 case we learn that the humanoids "had a height of 1.2 meters". Descriptions of facial features were not consistent with descriptions from other similar cases. This inconsistency does not indicate a fabrication necessarily, but it does become an anomaly that we will consider carefully.

Supplementing this basic vehicle and humanoid information, VISIT is quite interested in the effects on humans that UFVs are reported to cause. The ever growing data base includes many cases of eye injury and burns on various parts of the body. We will not go into this effect in this paper as Dr. Niemtow will be covering the medical effects. It is worth noting, however, that vehicle systems may be identified and modeled if the effects of the systems are well under-



stood. The medical aspects of these cases are helping us to build that model.

In conclusion, Project VISIT personnel are dedicated to finding useful information in the vast bank of USV information that is being accumulated on a worldwide basis. We have the expertise available to do the job; but we must depend on the witness, the abductee, and other UFO research organizations to provide the detailed information necessary to bring the project to fruition.

FRED MERRITT

Since graduating from Purdue University in 1955, Fred has worked in apparel merchandising. His current responsibilities are in inventory management and merchandising systems for men's clothing. He and his wife Glenna have a married daughter, Debra, who is a professional librarian, and a son, Steve, who works in the Peace Corps in the Dominican Republic.

Fred's interest in UFOs dates back to 1967, when he began collecting books on the subject - a library that has grown to over 250 volumes plus hundreds of periodicals. His primary interests are building UFOCAT, and looking for patterns in UFO reports with a view toward a comprehensive classification system that may contribute toward a solution of the UFO problem. He is a vice president of the Center for UFO Studies.

He presented a paper on classification of physical trace reports at the 1976 CUFOS Conference, and had a related paper read at UFOCON (Australian Centre for UFO Studies Conference). Besides Center publications, his articles have appeared in foreign journals such as GESAG Bulletin (Belgium) and ACOS Bulletin (Australia).

UFOCAT is aware of Fred Merritt as a minor source (investigative files and specialized report catalog), a major provider of coded material, and a user of specialized output. Fred acts as a clearinghouse for UFOCAT data, which is available at reasonable cost of interested parties. Inquiries should be directed to him at Center for UFO Studies, Room 207, 1609 Sherman Ave., Evanston, IL 60201.



UFOCAT AND A FRIEND WITH TWO NEW IDEAS

FRED MERRITT

ABSTRACT

UFOCAT, a computerized file of over 62,000 UFO reports is described briefly, emphasizing its unique scope both in terms of diversity and number of sources, and its global representation. Two analyses of UFOCAT data are discussed, relating the steps taken to prepare the data for analysis. From an analysis of sighting duration by report type we conclude that reports may well fit into one of two series: 'regular' and 'irregular'. From statistical treatment of physical trace cases, we conclude that specific report features, both singly and in combination, are associated with reports specifying UFOs of particular sizes. Both of these sets of results are expected to be useful in a comprehensive report classification system.

INTRODUCTION

UFOCAT is a computerized file of UFO reports and related items developed by Dr. David R. Saunders in 1969 and donated to the Center for UFO Studies in 1975. In its present form UFOCAT has above 100,000 entries, each appearing as a single line of notations that describe an alleged event according to the named source. Entries from multiple sources referring to a single event are blocked together, headed by a primary entry. (Figure 1) When last surveyed, the file contained 62,155 primary entries or "cases".

Some idea of the scope of UFOCAT can be gained from a survey of its sources (Table 1).

Table 1: UFOCAT SOURCE SURVEY

| <u>Type of Source</u> | <u>Number of Sources</u> | <u>Primary Entries</u> | <u>% to Total</u> |
|-----------------------|--------------------------|------------------------|-------------------|
| Investigative files | 67 | 21,147 | 34.0 |
| Clipping files | 19 | 7,474 | 12.0 |
| Periodicals | 48 | 14,621 | 23.5 |
| Authors' files | 18 | 5,600 | 9.0 |
| Books | 105 | 7,221 | 11.6 |
| Report catalogs | <u>31</u> | <u>6,092</u> | <u>9.8</u> |
| Total | 288 | 62,155 | 99.9 |

| IFN | UFN | SOURCE | DATE TIME | LOCATION | STOY #** | WITNES88 | TYPE | 0 0 Z |
|-----|-------------|-----------|---------------|------------------|-------------|------------|---------------------|--------|
| | 9374I | BY 7700* | 7703081930 | VY OATOHILLVILLE | 8.750 PA II | 6XX | 6FTX | I 5 .I |
| | 9374I=98544 | 5IR 77D6 | 7703091930= | OATOHILLVILLE | PA II | | 6TT ₃ | I 3 .I |
| | 98544=93809 | 5IR 77E6 | 7703081930, F | GATOWILLVILLE | PA II | 6XX | 6TT _{XNW+} | I .I |
| | 93809=08594 | 5IR 78353 | 7703081930, | OATOHILLVILLE | PA II | | 6FT | I 5 .0 |
| | 98594=A405I | 53R 780+ | 77030819+ | GATOHILLVILLE | PA |)MILETIOH(| 6TTQ-E | I |

Figure I: UFOOAT ENTRI8 (coordinates not shown)

After *Blue Book*, the largest single investigative file source is Center for UFO Studies files. "Periodicals" are mostly publications of various UFO groups, past and **present**. However, the largest source in this group is **FSR (London)**. MUFON Journal, Skylook, and International UFO Reporter are, of course, well represented.

Distance and translation problems naturally affect the geographical balance of UFOCAT. However, the efforts of a number of overseas contributors and the international scope of the UFO literature give varying degrees of representation from over 280 nations, states, and provinces. (Table 2)

Table 2: UFOCAT CONTENT - GEOGRAPHICAL SURVEY

| | <u>Primary Entries</u> | <u>% to Total</u> |
|-----------------|------------------------|-------------------|
| North America | 35,152 | 56.5 |
| Europe | 15,022 | 24.1 |
| South America | 3,652 | 5.9 |
| Oceania | 3,453 | 5.6 |
| Asia | 1,310 | 2.1 |
| Africa | 794 | 1.3 |
| Central America | 655 | 1.1 |
| Oceans, other | <u>2,117</u> | <u>3.4</u> |
| Total | 62,155 | 100.0 |

Currently our emphasis is on adding entries from investigative files while staying current with a half dozen periodicals and coded material provided by several active overseas sources.

General descriptions of UFOCAT have appeared in Center and MUFON publications, as well as some foreign journals. A detailed description of UFOCAT structure and coding conventions can be found in the UFOCAT Codebook (reference 1), which is essential for understanding UFOCAT output. The most frequent request for UFOCAT data is report catalogs - **chronological** by state, for example; or **specialists'** catalogs - the trace case catalog became so popular that it has been made available as a Center publication (reference 2). (Please note that unpublished witness names are kept confidential in UFOCAT output).

We also provide tallies of UFOCAT data - almost any combination of coded report features in a two way table.

David **Saunders** has published papers based on analysis of UFOCAT data on extrinsic factors in reporting levels, orthoteny, and wave analysis (reference 3). Several others are in the process of preparing or publishing papers based on UFOCAT data.

This paper deals with two of my own analyses of UFOCAT data. Besides providing some promising research leads, it introduces some ways in which UFOCAT data might be handled.

I. SIGHTING DURATION BY REPORT TYPE

UFOCAT report type is both a description of the event and an index of strangeness. All UFOCAT primary entries were tallied by report type and sighting duration (reference 4; and the results summarized in ranges of duration: less than a minute, 1 to 4 minutes, 5 to 14 minutes, 15 to 29 minutes, 30 to 59 minutes, and an hour or longer. The results will be presented in groups of 3 report types in increasing order of strangeness.

Figure 2 shows the contrasting profiles of the three least strange report types.

UFOCAT Type 1 refers to reports of lights or objects that are stationary, or moving at the same apparent rate as astronomical bodies. These reports are characterized by long viewing times, and are often easily attributable to stars or planets seen under unusual atmospheric conditions.

Type 2, lights or objects in continuous motion, are characterized by very short viewing times, and frequently turn out to be meteors, aircraft, etc.

Type 3 refers to lights or objects with a single discontinuity of motion. This may be continuous motion with one definite turn; more often it refers to objects or lights that move after remaining stationary, or vice versa. The viewing time distribution peaks in the ranges of 1 to 14 minutes, not at all typical of the previous two types.

Figure 3 shows startlingly similar distributions for three different kinds of reports.

UFOCAT Type 4 refers to lights or objects with multiple discontinuities of motion; that is, more than one turn or stop in the apparent flight path, even though the object may be quite distant.

Type 5 refers to close encounters, generally within 500 feet of the witnesses; Type 6 refers to landings.

Each distribution peaks dramatically in the 5 to 14 minute range, where witnesses have ample time to observe the phenomenon and realize that it is unusual. Each of the three types has enough observations of an hour or more to give the graph a noticeable upturn.

Figure 4 shows a different kind of distribution with interesting similarities and differences among the three highest strangeness kinds of reports.

UFOCAT Type 7 refers to reports of occupants seen outside the object, or to entities with no UFO. There appear to be two kinds of Type 7 reports; those very brief (less than a minute) encounters, and mid-range

Figure 2: DURATION OF LOW-STRANGENESS REPORTS

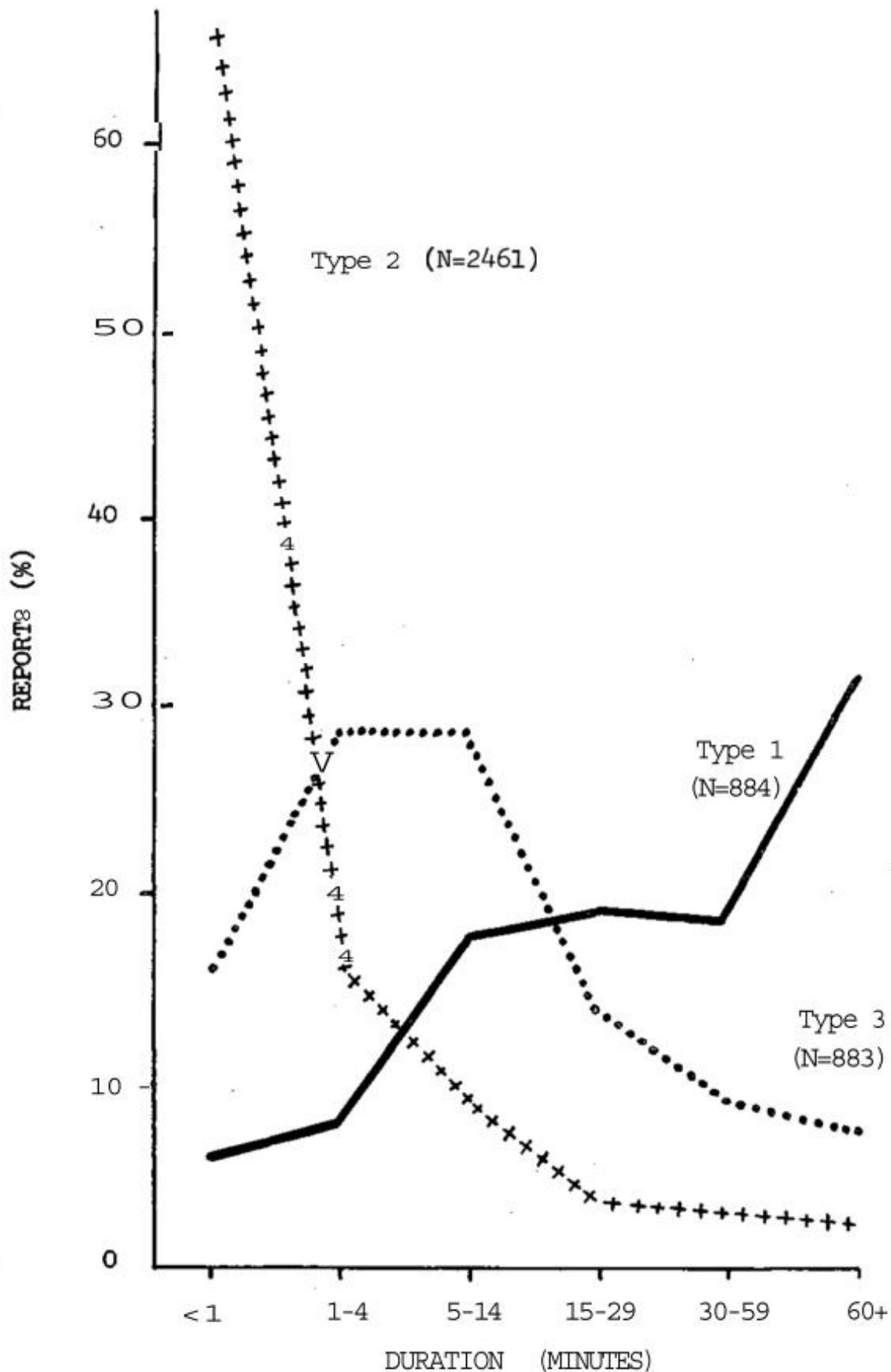


Figure 3: DURATION OF MEDIUM STRANGENESS REPORTS

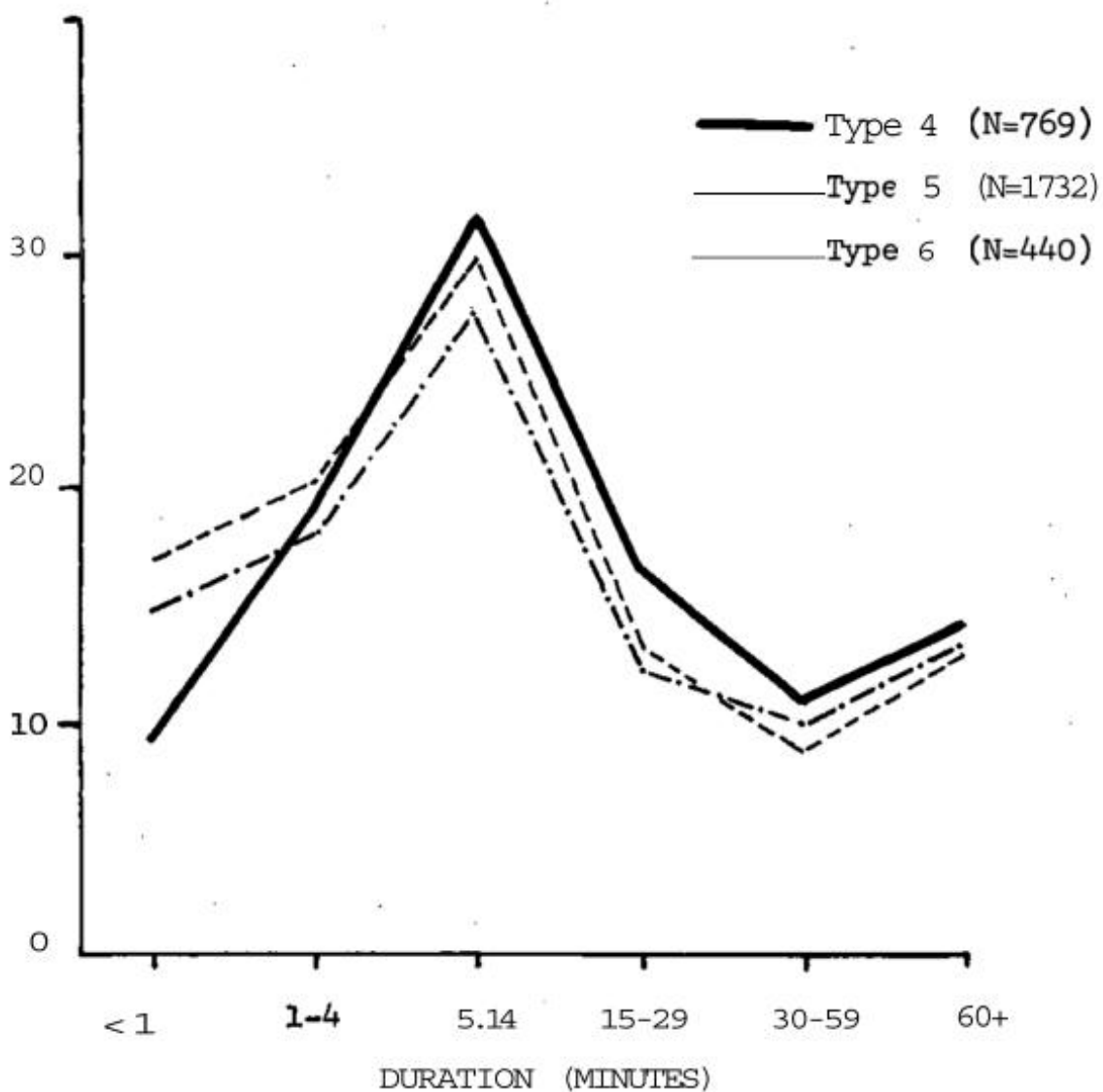
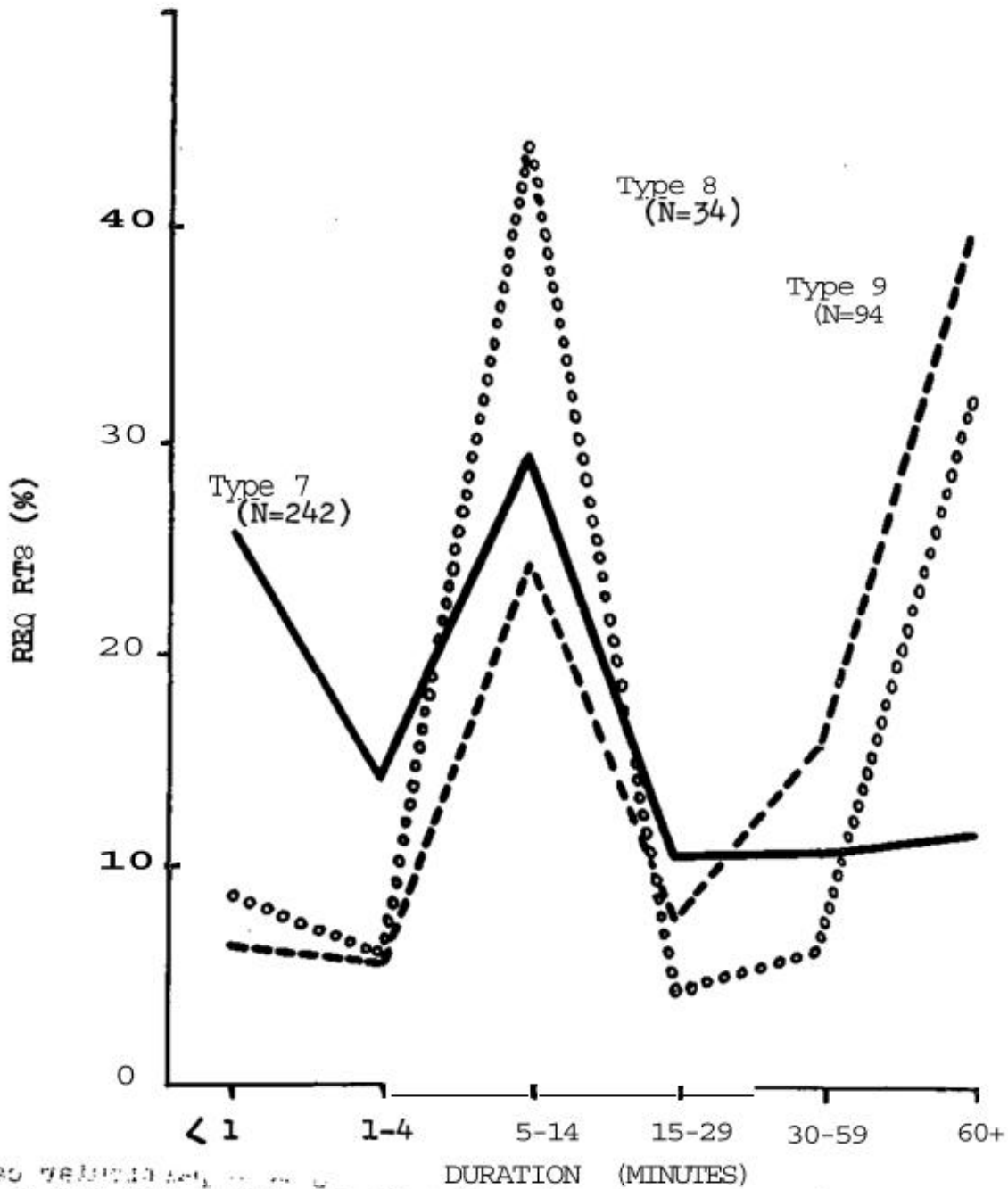


Figure 4: DURATION OF HIGH STRANGENESS REPORTS



based on the fact that the majority of reports are of short duration. The data shows that the percentage of reports with a request for re-investigation is highest for reports of 5-14 minutes duration. This is true for all three types of reports. The percentage of reports with a request for re-investigation is lowest for reports of 15-29 minutes duration. This is also true for all three types of reports. The percentage of reports with a request for re-investigation is highest for reports of 60+ minutes duration. This is also true for all three types of reports.

encounters of 5 to 14 minutes. Note there is no distinct upturn for reports of an hour or more.

Type 9 refers to reports of **interference**, including injuries to witnesses or animals, time lapses, and abductions. Again, there seem to be two distinct situations - an encounter of 5 to 14 minutes, or more frequently one of an hour or more.

Type 8, the highest strangeness UFOCAT report type, refers to reports of contact, defined as two-way intelligent communication between the witnesses and an **entity**. Although the numbers in the tally are small, there appear to be two distinct situations - the more common 5 to 14 minute chat, or contact for an hour or more. (It's important to remember that reports are assigned the highest applicable type in terms of strangeness. For example, an abduction report with occupants that involves two-way intelligent communication would be coded as contact (Type 8) rather than an occupant report (Type 7) or an abduction (Type 9).)

So far we can draw 4 conclusions:

1. Lowest strangeness reports have durations that suggest **common-place** non-UFO explanations.
2. UFOCAT Type 3 (single discontinuity of motion) appears to be a useful minimum strangeness level as a statistical tool for screening reports.
3. Medium strangeness reports (multiple discontinuities of motion, close encounters, and landings) are so similar in terms of duration that the composite for the group (Table 3) may be a useful standard, which we will refer to later.

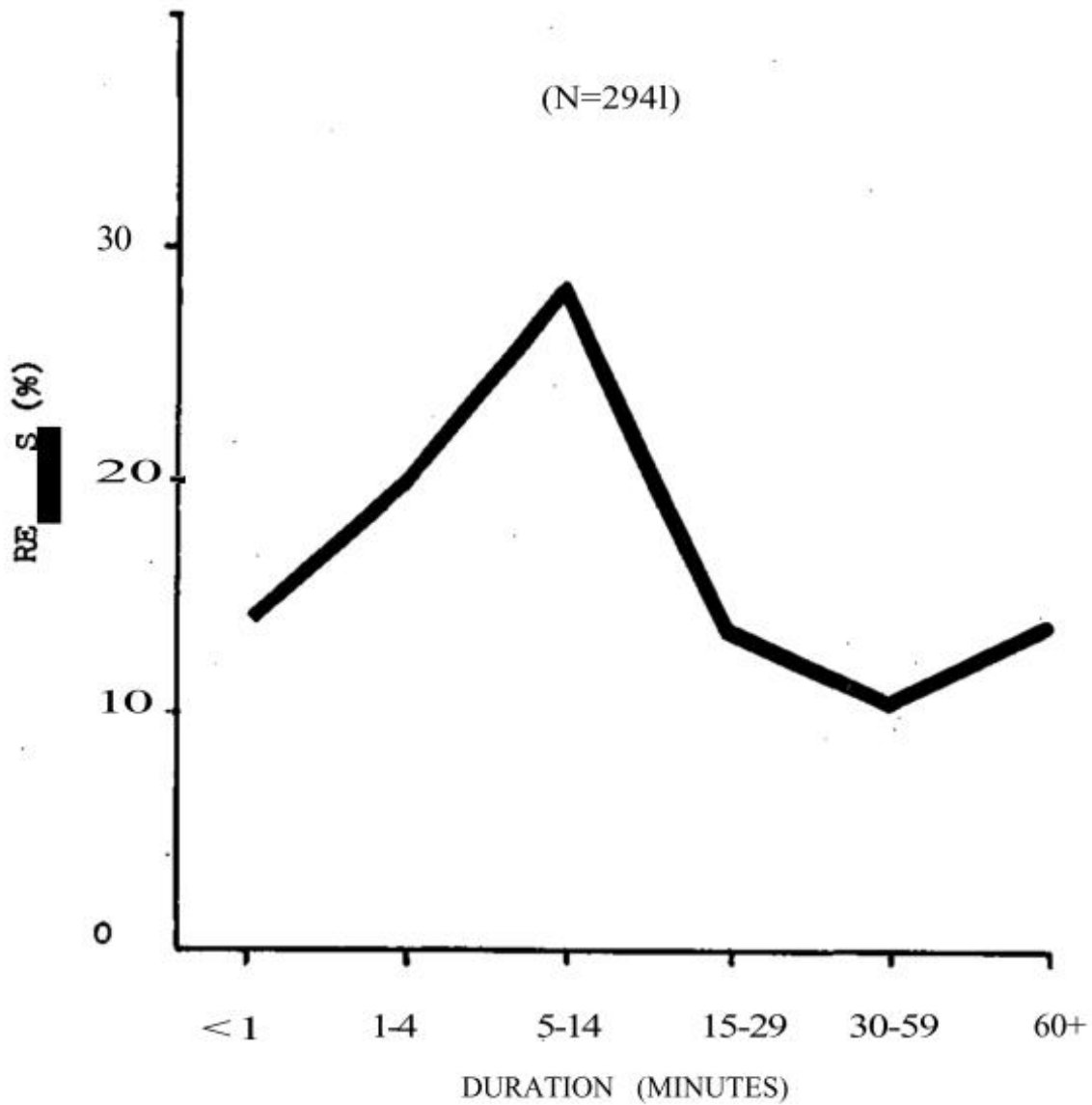
Table 3: "STANDARD." DURATION

| < 1 | 1-4 | .5-14 | 15-29 | 30-59 | 60+ | Total |
|-------|-------|-------|-------|-------|-------|--------|
| 14.1% | 20.1% | 28.9% | 13.5% | 10.1% | 13.3% | 100.0% |

4. Since each of **the** three highest strangeness report types has a distribution with two distinct peaks, each type may consist of two different kinds of reports.

For the rest of this analysis, we used a recent UFOCAT catalog of high strangeness reports. Larger amounts of data thus become available. The UFOCAT tallies used up to this point consider only primary entries with both type and duration in the single entry. In catalog form we can consult the entire block of entries pertaining to a particular case. To prepare the catalog for this **study**, all reports with a non-UFO explanation from any source were eliminated. Each block of entries was treated as a **single** case. **Each** case was used only **once**, taking the

Figure 5: "STANDARD" REPORT DURATION



highest strangeness level assigned to the case by any source.

Occupant reports divide readily into three categories: occupant seen only inside the UFO, occupants seen outside a UFO, and entity reports where no object is seen. (Figure 6) One of the striking features of these distributions is the high proportion of very brief observations of entities with no UFO. The distribution for inside occupants approaches the "standard" distribution.

Interference reports (UFOCAT Type 9) divide readily into two groups: abductions and time lapses, and various lasting physical effects on the witness, such as burns, eye irritation, headaches, etc. (Figure 7) As would be expected, abductions and time lapses have long duration - nearly half the cases an hour or more. The remaining lasting physical effects cases have a distribution very similar to the "standard". With additional data available, the distribution for contact reports (UFOCAT Type 8) remained the same. Efforts to divide the reports into meaningful sub-groups met with no success.

As a result of this analysis, we can divide medium and high strangeness reports into two meaningful groups: a series of "regular" reports with duration distributions that conform to the "standard", and a series of "irregular" reports that do not. (Table 4) This distinction may be useful in an overall classification system.

Table 4: REPORT TYPES RELATED TO STANDARD DURATION DISTRIBUTION

| <u>Regular Reports</u> | <u>Irregular Reports</u> |
|-------------------------------------|--------------------------|
| Multiple discontinuity of motion | |
| Close encounters | Entities with no UFO |
| Inside occupants | Outside occupants |
| Landings | Time lapses, abductions |
| Lasting physical effects on witness | Contact |

II. REPORT ATTRIBUTES RELATED TO OBJECT SIZE IN PHYSICAL TRACE CASES

As a means of back-ground, Vallee has suggested that object size is an important characteristic in classifying UFO reports: "Thus we see that different sizes are associated with two distinct categories of behaviors: the objects responsible for the reports of (treetop level and below) are of small dimensions, about 15 feet, and those responsible for reports of (objects seen in flight) have a diameter of 60 to 100 feet." He then focused on disc shaped UFOs as 20 or 30 meters in diameter (when seen in the sky), or from a "particularly good observation" 8 to 12 meters in diameter (when treetop level or below). (Reference 5). From data for landings in the wave of 1954, Vallee extracted an object description of five meter diameter, symmetry of revolution, and appearance in two phases - metallic disc or luminous sphere. (Reference 6). This description later became known as Vallee's First Positive Law. (Reference 7).

Figure 6: DURATION OF OCCUPANT REPORTS

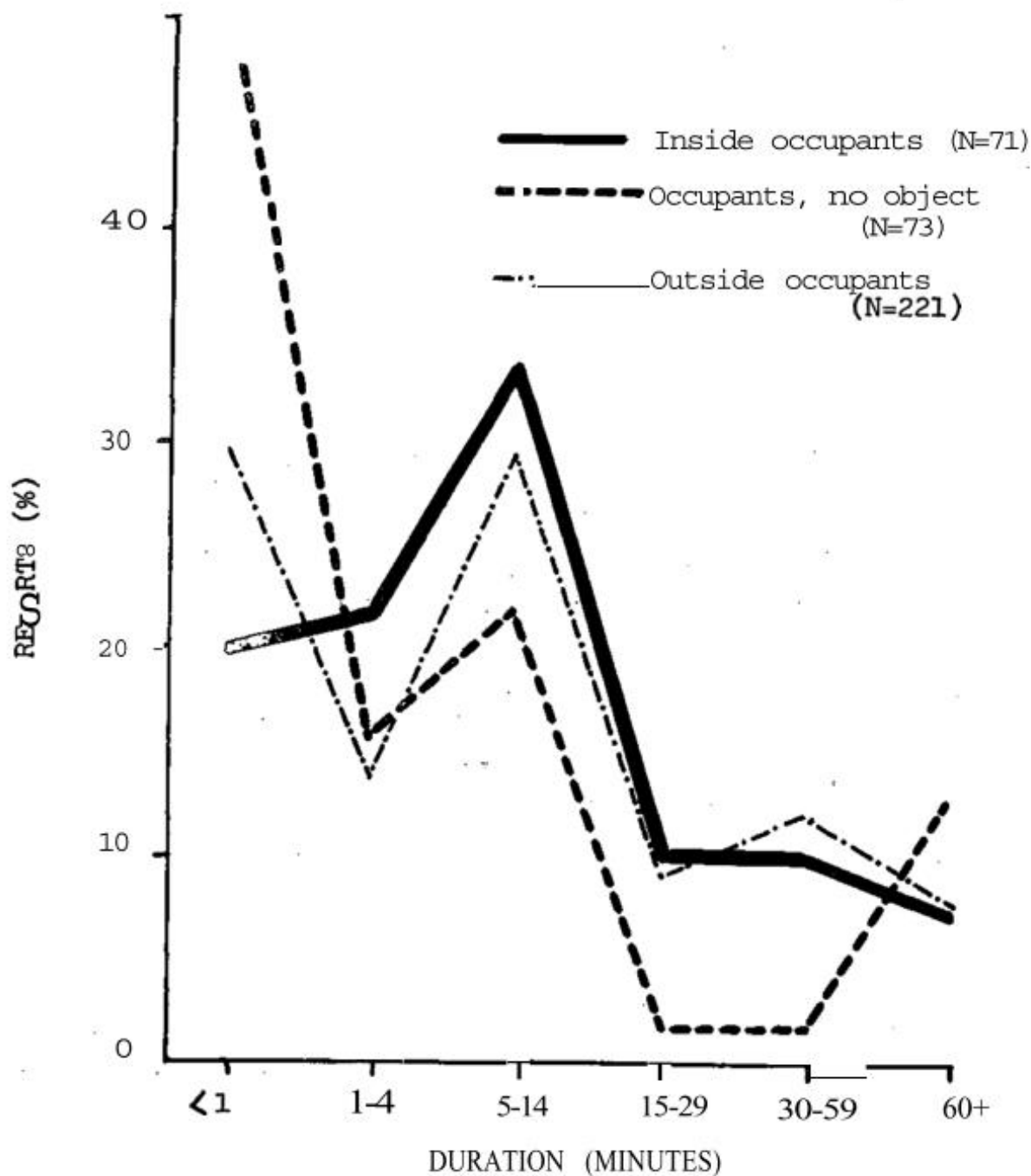
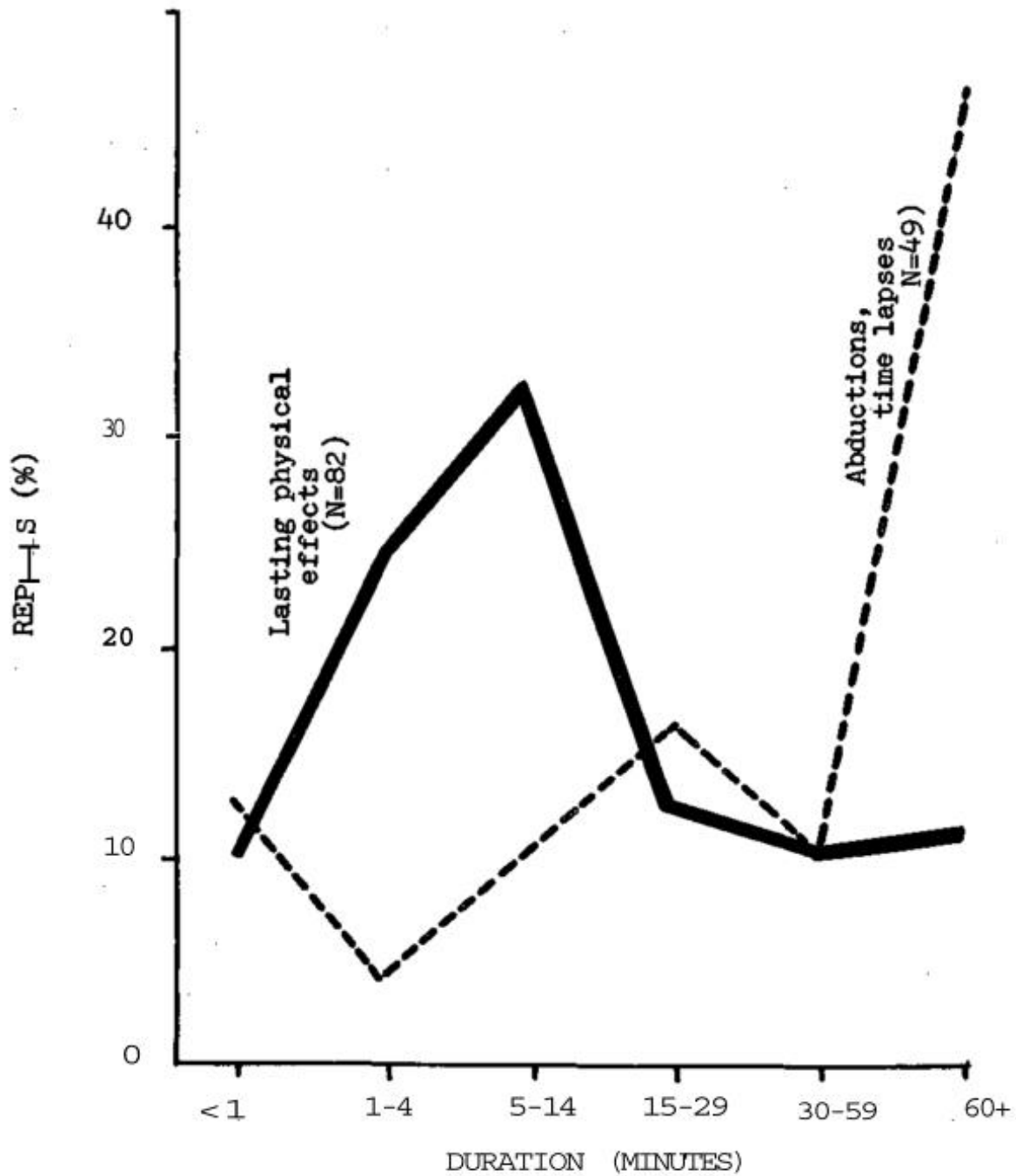


Figure 7: DURATION OF INTERFERENCE REPORTS



Working from a catalog of imprint cases, we developed a preliminary classification of five internally consistent catenas (groups of reports) based on the size and shape of the imprint pattern. (Reference 8). Each catena has a distinctive set of **characteristics**, including **object size** and **shape**. The most frequently occurring catenas are:

- Catena II "Classic discs" 10 to 11 meter discs
- Catena IV "Mob from Magonia" 4 meters or less, often unusual UFO shape
- Catena V "Pumpkinheads" 5 meter disc or glowing sphere

The two catenas with disc shaped objects correspond to Vallee's descriptions of low level discs; the Catena V object description is nearly identical to his First Positive Law, even though quite different data bases were used. The early indications are that object size may be useful as a sorting device.

Physical trace cases provide a unique data base of reasonably accurate estimates of object **size** due to the proximity of the witness to the UFO and the availability of lasting evidence. According to Phillips (reference 9), in 79% of the trace cases the witnesses claim to have been within 500 feet of the object; 40% report that they were within 50 feet. In many cases the trace site can be measured or paced off during investigation, and the result related to object **size**. In a few cases, the trace site photos allow size estimates at leisure.

From such a group of high information content reports, having reasonably accurate estimates of **object size**, we can expect to determine report attributes prevalent with specific object sizes. Further, we would expect the results to be useful in an eventual classification system.

Method utilized

Physical Traces of UFO Sightings (reference 10), a UFOCAT report catalog, was used as a data base. This is the most complete readily available catalog of physical trace cases, with about 1800 reports. An additional advantage of using this source is that it provides the opportunity to test the feasibility of using raw UFOCAT data (that is, without consulting the listed report sources) in this kind of study.

UFOCAT includes estimated object size data as provided by the source. Size is coded as the major object dimension in feet, using the nearest power of two as a coding convention, with estimates half-way between two values coded as the **larger**.

The UFOCAT report list was culled to only those which have an estimate of object size, but lack a non-UFO explanation from any UFOCAT source. Size codes from **certain** sources believed to be in non-regular UFOCAT coding were deleted. In cases with conflicting size estimates from multiple sources, data in the most primary entry was used. The resulting list consisted of 371 cases. (Table 5)

Table 5: CASE TALLY BY OBJECT SIZE

| <u>UFOCAT size code</u> | <u>Object size in feet</u> | | <u>Reports in list</u> |
|-------------------------|----------------------------|---|------------------------|
| -2 | 0.25 | | 4 |
| 0 | 1 | | 8 |
| 1 | 2 | 1 | 1 |
| 2 | 4 | 2 | 1 |
| 3 | 8 | 6 | 7 |
| 4 | 16 | | 95 |
| 5 | 32 | | 96 |
| 6 | 64 | | 47 |
| 7 | 128 | | 15 |
| 8 | 256 | | 4 |
| 9 | 512 | | <u>3</u> |
| | | | 371 |

All cases with the same reported object size were listed together, using composite UFOCAT data for each case. In selecting report attributes for consideration, special emphasis was given to subtypes (UFOCAT columns 90-95), since they frequently represent dramatic report features. The subtype list for each case includes notations from all sources, since much of the file was coded before all current subtype conventions came into use; therefore some of the primary entries for particular cases can be expected to be incomplete.

All report attributes occurring at least 30 times in the sample were used in the study. This attribute list turns out to include some items which would not be expected to be related to any other factor in the reports: photos of traces available, etc. These were left in the list as a sort of control for the statistical results.

Table 6: REPORT ATTRIBUTES IN ORDER OF FREQUENCY

| <u>Attribute</u> | <u>Cases</u> |
|--|--------------|
| Darkness | 182 |
| Disc shape | 118 |
| Noise, sound | 108 |
| Occupants | 104 |
| Imprints | 88 |
| Circular traces | 86 |
| Daylight | 77 |
| Electromagnetic (EM) effects | 56 |
| Animal reaction or present | 52 |
| Physiological (temporary) effects on witness | 48 |
| Photo of trace available | 47 |
| Sketch of object available | 42 |
| Artifact, remnant | 35 |
| Lasting (physical) effect on witness | 32 |

For each of the 14 report attributes, we constructed a two-way contingency table of tallies of reports in each object size having or lacking the attribute. For example, the table for "occupants" is:

Table 7: OCCUPANT FREQUENCY BY OBJECT SIZE

| | <u>0.25</u> | <u>1</u> | <u>2</u> | <u>4</u> | <u>8</u> | <u>16</u> | <u>32</u> | <u>64</u> | <u>128</u> | <u>256</u> | <u>512</u> | <u>Total</u> |
|--------------|-------------|----------|----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|--------------|
| Occupants | 0 | 0 | 1 | 1 | 18 | 40 | 27 | 12 | 4 | 1 | 0 | 104 |
| No Occupants | 4 | 8 | 10 | 20 | 49 | 55 | 69 | 35 | 11 | 3 | 3 | 267 |
| Total | 4 | 8 | 11 | 21 | 67 | 95 | 96 | 47 | 15 | 4 | 3 | 371 |

Examination of Table 7 strongly suggests that occupants are not distributed randomly by object size; for example, 16 foot objects appear to be over-populated, while the smaller sizes are under-represented with occupants. At this point we see the need for more formal statistical analysis to check our suspicions. The method recommended by David R. Saunders, who kindly consulted on this study, was to test the contingency tables against the null hypothesis that the distribution is random, expressing the result in bits of Remarkability (R). (Reference 11). The R value for the occupants table is 15.2 bits, a significant result. (Reference 12)

Tallies for each of the 14 report attributes were analyzed in a similar manner. Resulting R values are shown in Table 8; tallies for the significant tables are shown in Table 9.

Table 8: REMARKABILITY OF ATTRIBUTE DISTRIBUTION BY OBJECT SIZE

| <u>Attribute</u> | <u>Significant results (R)</u> |
|----------------------------------|----------------------------------|
| Occupants | 15.2 |
| Disc shape | 14.8 |
| EM effects | 10.5 |
| Imprints | 8.8 |
| Circular traces | 8.8 |
| | <u>Insignificant results (R)</u> |
| Daylight | 2.3 |
| Lasting effect on witness | 2.0 |
| Object sketch available | 1.4 |
| Animal reacted or present | 0.9 |
| Trace photo available | 0.5 |
| Darkness | 0.1 |
| Physiological effects on witness | -1.4 |
| Noise, sound | -2.0 |
| Artifact, remnant | -2.3 |

Table 9: TALLIES OF SIGNIFICANT DISTRIBUTIONS OF ATTRIBUTES

| | Object size in feet | | | | | | | | | | | |
|--------------------|---------------------|----------|----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|--------------|
| | <u>0.25</u> | <u>1</u> | <u>2</u> | <u>4</u> | <u>8</u> | <u>16</u> | <u>32</u> | <u>64</u> | <u>128</u> | <u>256</u> | <u>512</u> | <u>Total</u> |
| Occupants | 0 | 0 | 1 | 1 | 18 | 40 | 27 | 12 | 4 | 1 | 0 | 104 |
| No occupants | 4 | 8 | 10 | 20 | 49 | 55 | 69 | 35 | 11 | 3 | 3 | 267 |
| Disc shape | 1 | 1 | 1 | 3 | 13 | 36 | 41 | 9 | 3 | 0 | 0 | 118 |
| No disc shape | 3 | 7 | 10 | 18 | 54 | 59 | 55 | 38 | 12 | 4 | 3 | 253 |
| EM effects | 2 | 0 | 2 | 2 | 5 | 12 | 20 | 5 | 7 | 0 | 1 | 56 |
| No EM effects | 2 | 8 | 9 | 19 | 62 | 83 | 76 | 42 | 8 | 4 | 2 | 315 |
| Imprints | 1 | 1 | 0 | 9 | 17 | 24 | 28 | 7 | 1 | 0 | 0 | 88 |
| No imprints | 3 | 7 | 11 | 12 | 50 | 71 | 68 | 40 | 14 | 4 | 3 | 283 |
| Circular traces | 0 | 0 | 1 | 3 | 14 | 23 | 32 | 12 | 1 | 0 | 0 | 86 |
| No circular traces | 4 | 8 | 10 | 18 | 53 | 72 | 64 | 35 | 14 | 4 | 3 | 285 |

In order to determine which object size(s) account for the Remarkability in the significant tables, we partitioned each series, comparing the tallies for each object size to the balance of the sizes. For example:

| | <u>16 foot objects</u> | <u>all other sizes</u> | <u>total</u> |
|--------------|------------------------|------------------------|--------------|
| Occupants | 40 | 64 | 104 |
| No occupants | 55 | 212 | 267 |
| Total | 95 | 276 | 371 |

R = 10.8 Bits, indicating (in context of the other partitioned results) that the frequency of occupant reports with 16 foot objects is indeed unusual; in this case, unusually high. The statistical problems in evaluating the results of partitioning have been dealt with informally.

From working with the data, we suspected that pairs of attributes may combine at different rates in terms of the various object sizes. For each of the 90 possible pairs of attributes we constructed contingency tables by object size. For example:

Table 10: DAYLIGHT AND DISC FREQUENCY BY OBJECT SIZE

| | Object size in feet | | | | | | | | | | | |
|-------------------|---------------------|----------|----------|----------|----------|-----------|-----------|-----------|------------|------------|------------|--------------|
| | <u>0.25</u> | <u>1</u> | <u>2</u> | <u>4</u> | <u>8</u> | <u>16</u> | <u>32</u> | <u>64</u> | <u>128</u> | <u>256</u> | <u>512</u> | <u>Total</u> |
| Daylight no disc | 0 | 1 | 2 | 4 | 14 | 12 | 3 | 3 | 1 | 0 | 1 | 41 |
| Daylight and disc | 0 | 0 | 0 | 0 | 6 | 12 | 14 | 4 | 0 | 0 | 0 | 36 |
| Disc no daylight | 1 | 1 | 1 | 3 | 7 | 24 | 27 | 15 | 3 | 0 | 0 | 82 |

This table yields R=16 bits, with some interesting relationships. Presumably, the daylight observations would yield the most accurate object descriptions. **Thirty-two** foot objects seen in daylight are almost always described as discs (consistent with the 'particularly good observation' of an 8 to 12 meter disc noted by Vallee, and the author's previous description of Catena II "Classic Discs" as 10 to 11 meter domed or thick discs). Sixteen foot objects seen in daylight are reported as discs half the time (consistent with Vallee's First Positive Law and the author's Catena V). Eight foot objects seen in daylight are seldom described as discs (not inconsistent with the author's Catena IV object description as "4 meters or less, shape other than disc, sphere,....unusual object shape). Table 11 shows the R values for all 90 possible attribute combinations in pairs by object size.

Tables for the 16 combinations that proved statistically interesting were partitioned with the aid of a computer. We added the data for reports having neither of the two attributes, and compared the tallies for each object size to the tallies for all other sizes. For example:

| | <u>32 foot objects</u> | <u>all other sizes</u> | <u>total</u> |
|-------------------|------------------------|------------------------|--------------|
| Daylight no disc | 3 | 38 | 41 |
| Daylight and disc | 14 | 22 | 36 |
| Disc no daylight | 27 | 55 | 82 |
| Neither | 52 | 160 | 212 |
| Total | 96 | 275 | 371 |

R = 10.8 Bits, confirming in context that the daylight/disc relationship is significant for 32 foot objects. Tallies for the most interesting distributions of report attribute pairs by object size are shown in Table 12.

CONCLUSIONS

Although the meaning of some of the results is obscure, general inferences can be drawn. We conclude that, in physical trace cases:

32 foot objects are noisy discs associated with circular traces. Individual reports often combine the presence of occupants with EM effects.

16 foot objects are most frequently associated with occupants. Individual reports often combine temporary physiological effects with the presence of occupants.

128 foot objects are most frequently associated with EM effects.

4 foot objects lack occupants. Individual imprint reports do not involve disc shaped objects.

Table 11: REMARKABILITY OF ATTRIBUTE PAIR COMBINATIONS BY OBJECT SIZE

| Object Size | Daylight | Occupants | Disc shape | Physiological | EM effects | Imprints | Circular trace | Trace photo | Artifact | Object sketch | Animal present | Noise | Lasting effect |
|-----------------|-----------|-----------|------------|---------------|------------|----------|----------------|-------------|----------|---------------|----------------|-------|----------------|
| Occupants | 6 | 3 | | | | | | | | | | | |
| also happens | <u>16</u> | 8 | | | | | | | | | | | |
| Thyristor | 0.4 | | | | | | | | | | | | |
| EM effects | <u>10</u> | <u>17</u> | <u>10</u> | 6 | | | | | | | | | |
| Imprints | 8 | 7.5 | <u>12</u> | 4 | <u>1</u> | | | | | | | | |
| color or traces | -0.3 | 6.3 | -4.3 | -1.1 | 2 | 2.8 | | | | | | | |
| Trace photo | -4.1 | 3 | 1.3 | -4.7 | 1.3 | 3.0 | -1.3 | | | | | | |
| Artifact | -4.7 | 1.3 | 2.4 | -7.3 | 2.4 | -2.3 | -5.4 | -5.7 | | | | | |
| Object sketch | -0.3 | 2.1 | 7 | 3 | 2 | 4.9 | -2.3 | -2.3 | -1.8 | | | | |
| Animal present | -1.7 | 0.9 | -4.8 | -2.7 | -2.3 | -1.8 | -3.1 | -1.2 | -4.2 | 2 | | | |
| Noise | -2.1 | 1 | <u>12</u> | 0.1 | 4 | 2.9 | -2.4 | 0.2 | 2.6 | -0.2 | -3.3 | | |
| Lasting effect | <u>11</u> | 2 | 6 | -2.6 | 2.9 | 7 | 2.7 | -3.8 | -4.1 | -1.2 | -0.7 | -0.2 | |
| Darkness | X | | <u>9</u> | -4.8 | 3 | 2.3 | 2.7 | -0.8 | -2.3 | 4 | -1.4 | -4.3 | 0.2 |

Table 12: DISTRIBUTIONS OF REPORT ATTRIBUTE COMBINATIONS IN PAIRS

| | | Object size in feet | | | | | | | | | | | | | |
|--|------------------------------------|---------------------|---|---|---|----|----|----|----|-----|-----|-----|-------|----|--|
| | | 0.25 | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 | 512 | Total | | |
| Occupants w/ EM effects Both EN Effects w/ occupants | Occupants w/ EM effects | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | Both | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| Daylight w/ disc Both Disc : o daylight | Daylight w/ disc | 0 | 1 | 2 | 4 | 14 | 12 | 3 | 3 | 1 | 0 | 0 | 1 | 41 | |
| | Both | 0 | 1 | 1 | 1 | 6 | 12 | 14 | 4 | 0 | 0 | 0 | 0 | 36 | |
| Disc no Imprints Both Imprints w/ disc | Disc no Imprints | 1 | 1 | 1 | 3 | 10 | 25 | 28 | 13 | 2 | 0 | 0 | 0 | 84 | |
| | Both | 1 | 1 | 1 | 3 | 3 | 11 | 13 | 6 | 1 | 0 | 0 | 0 | 34 | |
| Disc w/ noise Both Noise w/ disc | Disc w/ noise | 1 | 1 | 1 | 3 | 7 | 21 | 20 | 11 | 3 | 0 | 0 | 0 | 68 | |
| | Both | 1 | 1 | 1 | 3 | 6 | 15 | 21 | 8 | 5 | 0 | 0 | 0 | 50 | |
| Occupants w/ physiological effects Both Physiological Effects w/ occupants | Occupants w/ physiological effects | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 81 | |
| | Both | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 25 | |
| Occupants w/ physiological effects Both Physiological Effects w/ occupants | Occupants w/ physiological effects | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 81 | |
| | Both | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 25 | |

8 foot objects are not discs.

Due to the **size** of the data base, this analysis can not make statements about the rarer object **sizes**. It does appear, however, that 2 foot objects do not make **imprints**.

We note that 64 foot objects, common enough in physical trace cases, have no apparent distinction in terms of the attributes tested.

ACKNOWLEDGMENT

Dr. David R. **Saunders** consulted on the **statistical** aspects of this study and produced the computer-assisted partitioning.

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12. A concise description of Remarkability can be found in David R. Saunders, et al, "Implications of the Personality Assessment System for Marital Counseling: a Pilot Study" in Psychological Reports, 1980, 46, 151-160. It reads in part: "Remarkability, or R, refers in a very technical sense to the 'weight of evidence', derived from specified data and favoring a most plausible alternative explanatory hypothesis over a null hypothesis. R is most conveniently quantified as bits of information. In this metric, regardless of context, R maintains two important properties: (1) the value of R expected from isolated analysis of random data is zero, and (2) more generally, 2 R is an estimate of the number of independent analyses of random data that must be performed in order to have a fifty-fifty chance of observing a new R greater than the given R. ...The informational transform of p=.05 is 4.25 bits, and the transform of p= .001 is 9.96 bits. We judge that thresholds for minimally impressive R in the range from about 5 to about 15 bits are roughly consistent with typical decision rules used in significance testing."

Appendix 1: OUTLINE OF A TYPICAL UFOCAT ENTRY

| <u>Columns</u> | <u>Type of information</u> |
|----------------|--|
| 1-5 | Indirect file number (blank for primary entries) |
| 6 | Blocking flags |
| 7-11 | UFOCAT file number (permanent reference number) |
| 12 | Blank (used as a control character for update program) |
| 13-16 | Level and identification of direct source |
| 17-20 | Position within source |
| 21 | Flag character for indirect source |
| 22-24 | Year (22 is blank for 20th century) |
| 25-28 | Date (month, day) |
| 29-32 | Time (hour, minutes) |
| 33 | Date and time flags |
| 34 | Weather flags |
| 35 | Terrain flags (object location) |
| 36 | Vehicle flags (witness location) |
| 37-56 | Location (alphabetic; 56 used for flags) |
| 57-58 | State or country |
| 59-60 | County or province |
| 61-63 | Number of witnesses |



| | |
|---------|---|
| 64 | Witness type |
| 65-67 | Witness age, sex (or age, sex configuration of group) |
| 68 | Witness name flags |
| 69-84 | Witness name(s) (alphabetic) |
| 85-88 | Absolute Sidereal Time (to be computed) |
| 89 | Type of report (as indicated by source) |
| 90-93 | Subtype(s) of report (as emphasized by source) |
| 94-95 | Explanation of report (as given by source). If no explanation is offered, 94-95 become available for additional subtypes. |
| 96-98 | Number of objects |
| 99-101 | Duration of event (usually in minutes) |
| 102-104 | Size or apparent size |
| 105-112 | Longitude |
| 113 | Coordinate flags |
| 114-120 | Latitude |

The remainder of 200 columns are devoted to detail coding, and are not in active use at this time.

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Dr. Sprinkle has written and presented many papers on UFOs, including his statements on investigation of UFO reports made before the Committee on Science and Astronautics Symposium on Unidentified Flying Objects, July 29, 1968. At the 1975 MUFON UFO Symposium in Des Moines, he spoke on the topic "UFO Research: Problem or Predicament?" He has also spoken on the subject of UFOs at symposiums sponsored by the National Amateur Astronomers Association and the American Psychological Association and has appeared on numerous television panel and talk shows.

Dr. Sprinkle has published frequently in a number of respected UFO journals, including "Some Uses of Hypnosis in UFO Research," Flying Saucer Review, September 1969; "Personal and Scientific Attitudes: A Study of Persons Interested in UFO Reports", FSR, Special Issue No. 3; and "What Are the Implications of UFO Experiences?" in the first appearance of CUFOS Journal for UFO Studies.

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UFO CONTACTEES: CAPTIVE COLLABORATORS**OR COSMIC CITIZENS?****R. LEO SPRINKLE, PH.D.**

ABSTRACT

This paper provides a tentative view about the significance of the UFO experience, with special emphasis upon the perceived characteristics and the alleged experiences of UFO abductees and contactees.

The paper summarizes a survey of more than 200 persons who claim to have experienced some kind of psychic impressions which are related to UFO encounters. A list of approximately 50 persons is presented, with a brief summary of their UFO experiences. These persons have participated in hypnotic time regression procedures in order to explore their "loss of time" experience during their UFO sighting; these persons recall memories of apparent abduction and examination by alien beings, or UFOLK; many of them report unusual **physiological**, **psychological**, and **psychic manifestations**, along with a feeling of being monitored and/or receiving "mental messages" from UFOLK.

The hypothesis of "cosmic citizen" is suggested as the **purpose** of UFO contact, and recommendations are provided for further investigation of the significance of UFO communication.

INTRODUCTION

Experienced investigators, e.g., Jim and Coral Lorenzen, co-founders of APRO (see references) and J. Allen Hynek, Director of CUFOS, have pointed out that reports of Unidentified Flying Objects (UFOs) can be characterized as incredible stories told by credible people.

This paper is an attempt to summarize and evaluate the significance of some of these incredible stories told by credible people. There is, of course, a human tendency to "kill the messenger" who brings unwanted news. I hope that the messages given to UFO contactees can be explored and evaluated for their possible significance before these **messages** are discounted or dismissed.

However, the reader/listener should be aware of my bias. I claim to have observed unusual aerial phenomena: In Boulder, Colorado, in the Autumn of 1949, a fellow student and I observed a "daylight disc" moving overhead; during the summer of 1956, my **wife**, Marilyn, and I

watched a "nocturnal light" or object as it apparently descended from the western sky, hovering and moving between us and the "Flatirons" (Rocky Mountain Foothills), and then disappearing to the north of town. In Alamosa, Colorado, and in Casper, Wyoming, I have observed "nocturnal lights" in the presence of other observers, including astronomers, ranchers, and law enforcement officers. Thus, over the years, I have changed from a "scoffer", to a "skeptic", to a "believer" in the reality of UFO phenomena. The reader/listener should be aware of my bias in evaluating my work with other UFO observers and with UFO contactees.

UFO Contactees

In 1962-63, I surveyed a sample of 259 persons who were fellow members of NICAP; their responses to a questionnaire were compared with a group of Graduate Students and Professors in Psychology (Sprinkle, 1969); their range of responses was similar to those of USA norm groups on the Rokeach Dogmatism Scale. I concluded that these respondents were no more than a sample of average USA adults.

In 1965, as a consultant to APRO, I became interested in persons who claimed to have experienced psychic impressions of UFO phenomena. My 5 year plan (!) was to collect responses from 100 persons; interview those persons who claimed to experience many psychic phenomena; utilize hypnotic procedures for exploring their psychic abilities and their UFO experiences; then, ask them to predict the locations of UFO "flaps" so that investigators could travel to those locations and gather data! Participants in the survey were asked to complete a questionnaire (see Appendix) with items on their educational and occupational background, ESP experiences, UFO sightings, and their impressions about the origin and purposes of UFO occupants, or UFOLK; also, they were asked to complete two psychological inventories: Adjective Check List (ACL) and Strong Vocational Interest Blank (SVIB).

In 1976, tentative conclusions from the initial study of 83 participants were reported (Sprinkle, 1976). Now, in 1980, over 200 persons have participated in the survey; current participants are asked to complete the questionnaire, Adjective Check List (ACL), Minnesota Multiphasic Personality Inventory (MMPI), Strong-Campbell Interest Inventory (SCII), and the 16 Personality Factors Test (16PF). In general, the patterns of scores for participants are similar to those of USA adults. The results do not support the "psychosis hypothesis": the hypothesis that UFO sightings are reported by persons who are experiencing neurotic or psychotic reactions.

However, these persons often express the fear of being considered "crazy" or being ridiculed by relatives, friends, or neighbors. These persons often express relief when they learn that other participants report UFO observations and related events, e.g., dreams, visions, physiological symptoms, poltergeist activity, apparitions, electromagnetic anomalies, and "mental messages" from entities who claim to come from outer space.



UFO Abductees

Since 1967, I have interviewed approximately 50 persons, using hypnotic time regression procedures, in order to assist the participants to explore their subconscious memories of a "loss of time", or temporary amnesia, during UFO experiences. These interviews are summarized as follows:

Hypnotic Sessions with UFO Abductees

| <u>Case No.</u> | <u>Participant (Year of Interview)</u> | <u>Summary of UFO Experiences</u> |
|-----------------|---|--|
| 1 | NHC (1967) | A factory worker described his impressions of an encounter with a strange being who tried, unsuccessfully, to invite NHC from his car into an UFO which hovered over Denver, Colorado. |
| 2 | CB (1968) | A college student described an examination by UFOLK , during a "loss of time", while she and her boyfriend were parked in a wooded area near Laramie , Wyoming. |
| 3 | Herbert L. Shirmer (1968) | A policeman recalled an encounter with UFOLK , during a 20 minute "loss of time", near Ashland, Nebraska (Sprinkle, 1976). |
| 4 | E. Carl Higdon, Jr. (1974) | An oil driller recalled a strange encounter with UFOLK , during a 2 hour "loss of time" experience while hunting elk, south of Rawlins, Wyoming (Lorenzen & Lorenzen, 1977; Sprinkle, 1979). |
| 5 | Charles Hickson (1975) | Charlie Hickson and Calvin Parker were fishing at a port in Pascagoula, Mississippi; they reported the experience of being abducted by 3 "robots" which floated them onto a hovering craft (Fisher, 1978). |
| 6 7 | Sandra Larson Jacki Larson (1975) | Mrs. Sandra Larson , her daughter, Jacki , and Jacki's boyfriend, experienced an hour "loss of time" while driving on a North Dakota highway. Their memories were of an abduction and examination (Clark, 1976). |
| 8 9 | RH RH's friend (1976) | Two college men reported impressions, or memories, of an encounter with strange beings while driving on a Utah highway. |

- 10 Mona Stafford
11 Louise Smith
12 Elaine Thomas
(1976)
Three Kentucky women experienced an hour and 20 minute "loss of time" while driving home from a restaurant; each described impressions of an abduction and examination by small beings with large eyes (Lorenzen & Lorenzen, 1977; Stringfield, 1977).
- 13 PS
(1976)
An Ohio woman recalled memories of an encounter with UFOLK shortly after an UFO sighting from the back porch of her home.
- 14 "Rachel Jones"
(1977)
Gayle P. Bever recalled impressions of an abduction and examination by alien beings; a small circular scar can be observed on her shoulder (APRO Bulletin, Nov. 1977, Vol. 26, No. 5).
- 15 Mary C. Sewall
(1977)
A Utah woman described memories of abduction by UFOLK and flight in a space craft, when she was living in California.
- 16 LS
(1977)
A young California woman described her impressions of mental communications with entities claiming to be UFOLK.
- 17 LP
18 BK
(1978)
Two young women recalled impressions of being taken aboard a space craft and encountering UFOLK, while driving on a Colorado county road.
- 19 Thomas Jankowski
(1978)
A Wyoming welder recalled memories of a strange face looking through his truck's windshield during a snowstorm; during a hypnotic regression session, he recalled memories of being on board a space craft and sitting at the "control panel."
- 20 BB
(1978)
A young college woman recalled a childhood incident of observing an UFO and experiencing "mental communication" with UFOLK.
- 21 JV
(1978)
A young businessman recalled impressions of abduction and examination by UFOLK during a drive with his partner on a Texas highway.
- 22 "Shannon Dempsey"
(1978)
A young Idaho mother recalled an UFO encounter and face-to-face meeting with UFOLK, while driving her son on an Idaho highway.

- 23 "Gloria Archer"
(1978) Ann **Canary**, a Denver woman, recalled her impressions of UFO abduction and examination; the memories of the experience had haunted her for 12 years; now, she views herself as a "cosmic citizen."
- 24 JD
(1978) A ranch foreman described his experiences of cattle mutilations, UFO sightings, ESP events, and face-to-face encounters with UFOLK (APRO Bulletin, July-Dec. 1979, and Jan. 1979).
- 25 JK
(1978) A former military paramedic recalled impressions of a strange light; a "loss of time"; abduction of him and his buddy by UFOLK, while strolling on a beach in a Central American nation.
- 26 PLW
(1978) A college student recalled an encounter with 7 foot tall beings, in cloaks, who approached his stalled car while he was on leave from the USAF and traveling in **Wyoming**. He was given "**precognitive**" impressions of California earthquakes and UFO **landings**.
- 27 SF
(1978) A young male photographer recalled impressions of an abduction and examination of him and his partner, by UFOLK, while they were camping in Arizona.
- 28 Pat L. McGuire
(1979) A **Wyoming** rancher, who had 2 cattle mutilations on his ranch, recalled a "loss of time" while hunting in the Teton Mountains; his experiences included a "mission" to dig a **well**; encounters with UFOLK; and vivid but strange impressions of the Israeli-Egyptian War of October 1973.
- 29 SAL
30 SL
(1979) A husband and wife recalled an abduction by UFOLK while traveling on a New Mexico highway.
- 31 Barbara Freund
(1979) A U. of Wyo. Student recalled impressions, or memories, of abduction and examination by UFOLK on board a space craft, while meditating in her **Laramie** apartment.

- 32 RD
33 GD
34 MD
(1979)
Father, mother, and son recalled an abduction experience, by UFOLK, when camping in a desert in Mexico. The father described impressions of "messages" from UFOLK about the Near East and increased UFO activity beginning in February 1980.
- 35 Millie Lindsey
(1979)
A coach of a University Women's Softball team recalled an earlier UFO sighting, and UFOLK encounter, when she was driving on a California highway.
- 36 TJM
(1979)
A young woman recalled a childhood memory of a crash of a strange airplane in a small Texas town.
- 37 RA
(1979)
A middle aged man recalled his experience as a young man in the USAF, encountering an UFO occupant and craft near an AF Base in California.
- 38 DD
(1979)
A man from Washington State described a conscious childhood memory of an abduction by several "Bigfoot" creatures; during hypnotic regression procedures, he recalled memories, or impressions, of small UFOLK who seemed to be in control of "Bigfoot" activities.
- 39 RKM
(1979)
A young man recalled an encounter with UFOLK while parked in a car in Palmedale, Florida.
- 40 DJG
(1979)
A young English man described his memories of an encounter with spiritual entities, or UFOLK, who claimed to be "Andromedans."
- 41 SLN
42 LEN
(1979)
A husband and wife recall a UFO sighting and an encounter with UFOLK on a Colorado county road.
- 43 PCT
(1979)
A young man in Brazil described his impressions of "out of the body" experiences and encounters with UFOLK and/or spiritual beings.
- 44 Kimberle Lenz
(1979)
A young woman described her memories of an auto journey on a Colorado road, with her brother, and the impressions of an abduction by UFOLK.

- 45 BH A young Wyoming woman described her impressions of mental communication with UFOLK during her travels in Europe and California.
 (1979)
- 46 GG A Virginia man described his impressions of an UFO abduction and examination by UFOLK, including the feeling that he was somehow "transferred" into another body or that his body was "duplicated."
 (1980)
- 47 Judith E. Doraty A woman described her impressions of an UFO abduction; the woman recalls the interior of a craft and an operation by UFOLK on a calf.
 (1980)

Interviews (without hypnotic procedures) with UFO Contactees and Abductees

| <u>Case</u> | <u>Participant</u> | <u>Year of Interview</u> |
|-------------|----------------------|--------------------------|
| 1 | Betty Hill | 1967 |
| 2 | Barney Hill | 1967 |
| 3 | Catherine Fisher | 1968 |
| 4 | Tomooki E. Wantanabe | 1974 |
| 5 | Wayne S. Aho | 1974 |
| 6 | Lucille McNames | 1974 |
| 7 | Johnny Sands | 1976 |
| 8 | Travis Walton | 1976 |
| 9 | K.C. (England) | 1979 |
| 10 | F.M. (Brazil) | 1979 |
| 11 | Dorothy E. Burrow | 1980 |
| 12 | Ida M. Kannenberg | 1980 |

Many UFO contactees describe memories, or impressions, of close encounters with UFOLK, including abductions and **examinations**; many contactees report injuries of physiological symptoms (Niemtzow & Schuessler, 1980), such as temporary paralysis, dizziness, nausea, vomiting, headache, blindness, perceptions of odors and sounds. Sometimes, UFO contactees report chronic symptoms, e.g., skin lesions. Many UFO contactees report a variety of psychic manifestations and paranormal events in their lives. Some contactees recall impressions, or memories, of a series of encounters involving "instruction" by UFOLK for a mission or a task in this life; in some cases, these individuals feel as if they have "developed" a new body or a new personality, or as if they have been "joined" by another personality. In some cases, these persons describe messages from UFOLK which purport to offer prophecies or predictions about the next 20 years in the history of humankind (Sprinkle, 1979b).

Of course, there are many doubts and questions about the significance of the claims and the "messages" of UFO abductees and contactees; these persons themselves are skeptical about the source of these messages. A skeptical attitude is appropriate in evaluation; however,

that attitude may be a hindrance in the exploration of UFO experiences. For example, my own skepticism caused a delay of almost 2 years before beginning the investigation of the UFO experiences of Pat L. McGuire.

Pat L. McGuire; UFO Contactee

Pat McGuire and his wife, Wanda, live with their 8 children on a ranch 30 miles north of Laramie, Wyoming. Pat is 37 years old; he was born (August 15, 1942) and raised in Wheatland; he worked as a guide and outfitter for 14 years, and he farmed with his father and brothers. In 1971, he talked with other people about his plan to dig a large well in a prairie basin near Bosler, Wyoming. His father and brothers decided not to go along with his plan; some people told him that they thought his plan was a "crazy idea." He called several companies, in Arkansas, California, and Texas, but he was unable to hire anyone to bring in a rig which was large enough to dig the proposed well. Finally, he enlisted the aid of a friend to build the rig. While continuing to work his cattle, and living in a small trailer house, Pat worked compulsively for several years at a project which seemed "crazy" to others but "real" to him: he marked a spot in the ground where he wanted to dig the well; he set up the rig and hired a driller to dig the well; he set up an army tank motor (which he had bought several years earlier) and he hired someone to install the pump (which had been purchased from a company whose representative tried to dissuade him from buying the pump); he dug a 15-inch hole to the depth of 350 feet.

Now, the present motor can pump 8000 gallons a minute of pure water, and Pat can irrigate simultaneously 10 "circles" or approximately 14000 acres of malt barley. Pat works long hours, including the midnight and 3 AM "check" on the irrigation systems; however, he and his family have created a huge garden in an area that once could only support sagebrush, jackrabbits, and some cattle.

In 1976, Pat telephoned me, introduced himself, and stated that he had seen several strange objects in the air over his well and ranch; I told him that I would send him a report form to complete and return, and I thanked him for his call. He completed and returned the form; later, he called to invite me to visit the ranch, while Deputy Sheriff Jim Conyers investigated the mutilation of a cow. I did not accept the invitation; I had been quite busy with my office duties, and my weekend travels to various states to interview UFO abductees.

Almost 2 years after Mr. McGuire's initial telephone call, I finally drove the 30 miles to his ranch; my willingness to investigate his UFO experience was based upon the possibility that Pat had experienced a "loss of time" during a hunting trip with his brother-in-law in the Teton Mountains during October of 1973.

When I met Pat, I found him to be a friendly and pleasant man. I was fascinated by the huge well and irrigation system. Pat is of average height and weight, with an open and sincere manner; he is proud of

his ranch, and his family who come from a background of Irish-Catholic traditions; he is not an articulate speaker, and he admits to his difficulties in writing and spelling; however, he is intuitive about **people** and situations; and he is suspicious about any businessman who tries to tell Pat L. McGuire what he should do and how to do it!

Pat has been willing to be the object of many investigations: psychiatric evaluation; psychological inventories; and hypnotic time regression procedures. According to the report of a psychiatrist, Dr. Angela I. Howdeshell, Pat was diagnosed as experiencing no psychiatric illness; according to the psychological inventories, Pat's pattern of scores are like those of persons who are seen as friendly, dominant, conscientious, suspicious and "hard to fool." In the presence of many investigators and observers, Pat has allowed himself to follow hypnotic time regression procedures for exploring his impressions and memories of his UFO experiences. The obtained information is so strange that all of us, including Pat, find ourselves blinking our eyes and shaking our heads in disbelief!

In my initial report to APRO (November 1978), I described the various claims by Pat, his family, and co-workers: sighting of a large "ball of fire" over the fields; sightings of "flying saucers" over the well and over the rise near the trailer home; poltergeist activity (raps or knocks on the trailer); electromagnetic effects on the electrical systems by the house and well, etc. Pat has described many strange events which occurred while he was alone on the ranch, e.g., electromagnetic effects when, without any known cause, the power of the irrigation systems would be turned off. During one night, he experienced **paralysis** of his body, which left him screaming for a few minutes until the paralysis gradually subsided.

During the summer of 1976, two cattle mutilations occurred on the ranch, shortly after a period of many UFO observations. At that time, Pat was of the opinion that he and his brother-in-law should "catch the guys" and claim the reward. (Pat had assumed that "sex cults from Laramie" were responsible!) However, with careful planning and a quiet approach toward the "lights," they were unable to see any persons or vehicles. Then, one evening, Pat observed a "flying saucer" descend toward a ridge, approximately 1 mile from the trailer house; through his "spotting" telescope, Pat watched the UFO as it seemed to hover, then move around the ridge; the cow, which had been under the UFO, was no longer there. The next morning, Pat drove to the area, found a calf bawling, but he found no trace of the missing cow. Pat began to change his views: he wondered if UFOLK were responsible for the mutilations, as if "they" were "governors" and in control of human activities.

Then, in the winter of 1979-80, during several hypnotic sessions, Pat found himself describing two kinds of impressions which were puzzling and mysterious: impressions, or memories, that he had been transported to an "Oval Room" for instructions by alien beings, so that he could begin his plans to dig a well; and impressions, or memories, that

his "mind" or his subconsciousness had been "implanted," somehow, into the body of an "Israeli General," during the war between Israel and Egypt in October 1973. Pat obtained impressions from the UFOLK that he had lived several lifetimes as a Jewish military officer, fighting Romans, and other enemies of Israel.

Although Pat is puzzled by these impressions, he now wonders if these impressions are connected with his compulsion to buy and wear a large belt buckle which features a "star of David." Now, he also wonders if these impressions, or memories, are connected with a (**precognitive?**) feeling, which occurred in 1973: a "vision" while watching a TV news program, that Israeli military forces would move toward Cairo, only to be stopped by USA paratrooper forces. Pat said that his "vision" was confirmed in a conversation with a young man, wearing a USA Army jacket with an 82nd Airborne "patch," who worked as a temporary crew member on the well. Then, Pat began to doubt the claim of the young man, because no mention was made in the public news about the USA military forces in Egypt during October of 1973.

Pat is puzzled about the significance of these impressions about possible past **lives**; these impressions are not consistent with his childhood training. However, he accepts the possibility that he may have received "**instructions**," in 1967, to begin plans for digging the well; he describes his efforts in digging the well to be similar to the compulsive behavior of the hero in the movie, Close Encounters of the Third Kind. Pat is puzzled by the impressions, or memory, of a message from the UFOLK that they would "bring the water" if he would dig the well; however, he **knows** that the well exists, and he knows that several neighbors and companies have tried, without success, to drill other wells in nearby locations.

What can be concluded from the experiences of Pat McGuire? **What** are his impressions of UFOLK who steal a cow and who monitor his life and well and irrigation system? Pat is puzzled by these strange experiences, but he is aware of several changes in his life:

- 1) After 1973, he experienced anxiety whenever he tried to hunt in thick timber; now, after hypnotic time regression procedures, he again enjoys hunting trips to Western Wyoming.
- 2) He recognizes the possibility that the "flying saucer", which **picked** up one of his cows, could have picked up a cow - unobserved - on the other side of the ridge. He interprets this experience as an indication that "they" wished to be observed. Now, he no longer holds the view that animal mutilations are performed by humans; he believes that UFOLK are "in charge."
- 3) Pat no longer fears the presence of UFOLK; the monitoring of the well and irrigation activities seems to be a benign,

or neutral, rather than a hostile, activity.

- 4) Pat does not know how to interpret the impressions of "past life" experiences; however, they are vivid impressions. He can accept the possibility that "past lives" impressions are "fantasies" or that they are "real." In either event, his attitudes are those of a person who cares about other humans, especially children, and he now believes that U^FOLK are "governors" of humankind.

Significance of UFO Contact

What can be concluded from the investigations of UFO abductees and contactees?

If one listens to these persons as they describe their initial memories or impressions of abductions, then one can conclude that these persons view themselves as captives. Most of these persons are frightened; sometimes these persons are frantic and almost hysterical as they describe their abductors, and as they "relive" the abduction experienced during hypnotic regression sessions (Sprinkle, 1977).

If one watches these persons during their daily activities, one often sees them as obsessive - compulsive (or **creative!**) in their behavior. Contactees often act as if they were **collaborators**: working with unseen demons who push, nag, cajole, and/or encourage the contactees to complete a project or mission. Some contactees feel obliged to move to another area; some begin reading about ancient civilizations; some receive impressions or messages of scientific theories and devices; some receive impressions or messages of "future" events.

If one observes UFO contactees over a span of years, then one could offer another hypothesis: these persons are changing from Planetary Persons to Cosmic Citizens (Sprinkle, 1979a). These individuals seem to exhibit a caring concern for all humankind, as if they are experiencing compassion for all other persons, not only their immediate family and friends. They seem to have developed many of the characteristics which have been described as "Cosmic Consciousness" (Sprinkle, 1976b).

Objections. Of course, there are many objections by skeptical investigators about these claims, and impressions, which arise during hypnotic time regression procedures. Experienced investigators, e.g., Lawson (1979), and Hendry (1979), raise questions about the uses of hypnosis in evaluating UFO abduction claims. There seems to be little objective "proof" to substantiate the claims of UFO contactees. But there is a tentative hypothesis which can be explored about the difference between UFO "observers" and UFO "witnesses."

Hypothesis of UFO Witnesses. Experienced investigators are in a position to consider one specific hypothesis about UFO contactees: UFO

"observers" who become "witnesses" increase their opportunities to develop successful lives. In other words, the hypothesis can be stated as follows; those persons who claim UFO encounters, but who refuse to "go public", may experience personal difficulties in developing successful **lives**; those persons who claim UFO encounters, and who become "witnesses" or who are willing to "go public", may risk social ridicule but their personal lives will be **enhanced**. (if the reader/listener has seen the movie, "Oh, God," starring John Denver and George Burns, then he/she is aware of the model or paradigm: Hero/Heroine experiences a series of strange, and bothersome, "coincidences" or psychic manifestations; Hero/Heroine is reluctant to become a "witness" or to tell other people about the **experiences**; the manifestations continue. Then, Hero/Heroine decides to follow the urge and give the "message" to the public or to the rest of the world. The twofold message is simple: God exists; be kind to one **another**. Hero/Heroine experiences social ridicule, but gains spiritual maturity and a sense of personal satisfaction in completing the task or **mission!**)

As an example, here is a letter written on January 10, 1980, to a woman, Peggy, who is frightened and puzzled about her UFO experiences and her feeling that she is being monitored by UFOLK. The letter is written by Ms. Ann Canary of Denver, **Colorado**. Fourteen years ago, Ms. Canary experienced an UFO encounter, including abduction; bodily examination; out-of-the-body experience; and near-death experience. For 12 years, she lived in fear of ridicule and rejection by family and **friends**. After hypnotic regression procedures to assist her in recalling **and** integrating her memories of her UFO experiences, she has become more open in discussing her experiences, and she is more willing to share her beliefs about the significance of UFO contact: the merging of "science" and "**spirituality**."

Now, she sees herself as a "Cosmic Citizen" who is dedicated to the welfare of all humankind, and she feels an affinity to all existence. She is concerned about the current crises in **Earth's** political, economic, and military conflicts' **however**, she is optimistic about the scientific and spiritual development which can emerge. She writes to Peggy as follows:

January 10, 1980

Dear Peggy, .

I received your letter yesterday and will try to write you what words I can that may help you or a least give you some reassurance and comfort. I did receive a letter with your name and address and request for me to correspond with you from Leo several days **ago--but** I had company with me until January 6 so had no privacy for letter **writing**. Sorry for the delay in getting with you.

First, I would suggest that you get a loose leaf notebook and try to keep a record of your feelings and experiences. Keep it next to your

bed and record as much of your **experience (s)** as you can remember. It may **prove** very helpful in future months in trying to find your own explanation for what has been happening to you.

I am **not** clear as to what you mean when you write, "zapped my **mind.**" Could you **explain** further. Is this a telepathic **communication**, or do you feel that you are being monitored physically in some way? I ask this question for I have found that they work in each individual in a different way. With some individuals they seem to pursue biological knowledge. With others they are more interested in your mental capabilities (thoughts or knowledge in a particular area they are concerned with communicating with you **about--like** law enforcement on **Earth**, or how you feel about being a teacher, engineer, **etc.**)

With others they appear to be interested in what motivates you or your morality or ethical conduct towards others. Your inner spiritual awareness, open **mindedness**, and conduct within yourself towards your **surroundings**.

I am not sure **that** I can tell you what they want or why they seem to be paying attention to you at this time in your life. This is one of the major questions we all have to try to deal **with--why?**

I am not positive that they are from **space--but** they could be. I have often wondered if **they** are not multi-dimensional and are here to study and learn about our **world**. I believe they are from space, but I have no proof; and **they** certainly do not respond to the known laws of physics or science as we know it. Their communication with me has been thru various dreams and telepathic means.

I feel that what they wanted from me was for me to become aware of the reality of our living Universe. They do on occasion check on me or monitor me in some way. I can usually feel their presence and hear a **slight** ringing when they are looking me **over**. They seem to check on the progress we make **here--and** after they establish contact with you they can always locate you.

Peggy, don't be afraid of them. In the first **place--those** that I have had contact with in the past may have appeared to have been "cold" in their dealings with **me--but** basically they are very intelligent and clinical in their approach to us. They do not understand human emotional reactions and I think that this is one reason they have not made themselves public or obvious beyond doubt to this planet.

I believe, like I stated above, that they keep coming back to monitor and check up on my **progress**. To see how I am progressing with the knowledge that **has** come my way and that I have been receptive to as a result of my experience with them several years ago. **Peggy**, I do not have solid answers for **you--but** you can rest assured that you are not alone. There are many of **us--and** each of us has experienced something unique that has changed our concepts about our Universe, our Planet, ourselves.



Try to pray often and meditate within yourself. Keep an attitude of peace if at all possible. You may have an opportunity to learn and grow as a human being that could prove to be most worthwhile and very rare. There are many questions to be answered and it appears that each one of us is given only a small part of the puzzle.

So, keep faith with yourself. You and you alone know what has happened. You may not be able to prove it (none of us can at this point in time), but the important thing is that you believe in yourself, and what you have experienced. There are some books that you might try to find and read. At the close of this letter I'll send you some suggested titles and the names of the authors.

Try to learn all that you can--and keep an open mind. I would suggest that you be careful in so far as who you share your experiences with. Keep a diary and stay open for the possibilities for learning and growth.

I believe that what they want from all of us is to assist us in our individual growth as far as our selves and others we come into contact with--as well as learning about Earth and its civilization. They are (I hope and believe) trying to help this planet evolve into a higher state of awareness. We are too backward in our beliefs and we must change or face the strong probability of destroying ourselves and our world.

I do hope that some of what I have written to you will be appropriate and helpful. It is always easier to sit and talk with another person face to face but I guess we will have to try to help each other thru letters. If you wish to write further questions to me I'll try to help you in any way that I can. I am not going to have all of the answers--but I may be able to give you some ideas and some insight in so far as what I have learned these past 14 years.

Thank you for your letter and keep your courage up. Peggy, you are not alone with all of this. There are many many people with questions and desiring explanations re their experiences and all of us just do what we can to help each other and make our lives as SANE as possible in the process. Your own reality and understanding will be affected by all of this so as I said before--get in touch with yourself and stay open within so that you can learn from all of this.

Love and Peace,

(Signed) Ann

. Here is another example of an UFO contactee, Ida M. Kannenberg, who has described her 1940 UFO experience, and who has shown the courage and willingness to share the "messages" which she receives from her UFO mentor, Hweig. In a letter dated February 21, 1980, she writes as follows:

Feb. 21, 1980

Dear Leo,

Hweig has read along with me your proposed paper on contactees and abductees. He is particularly intrigued by the phrase "captive collaborators."

"You are exactly that", he says, "But only because you want to be. Each of you has sometime in his or her life asked to be of benefit to his fellow-man, to be of some service to the world. So we give you the opportunity to be **just** that! Where else, how else, could you quiet, little, unobtrusive people find a way to be of so great a benefit to your people and to your world? Where else the opportunity? Who else would give you the years of **encouragement**, the tedious years & years of guided development, the constant attendance and monitoring and direction of your intent?

"We offer opportunities no one else could possibly do, as we have great and mighty colleagues to call upon, personalities of many natures other than what you call "human," forces and powers you never dreamed of. We give you opportunity, direction, and developed capacities to do just what you have prayed & begged to do - help your own people, save your own world from destruction and **terror**."

Thus speaketh Hweig.

(Signed) Ida

Summary and Conclusions

This paper has summarized a survey of more than 200 persons who claim to have experienced some kind of psychic impressions which are related to UFO encounters. Also, a list of approximately 50 persons was presented, with a brief summary of their UFO experiences which were explored through hypnotic time regression procedures. These persons described impressions, or recalled memories, of apparent abduction and examination by alien beings or UFOLK.

The paper has explored briefly the general hypotheses that UFO contactees view themselves as "captives" or "collaborators" or as "Cosmic Citizens." The writer suggests that UFO investigators continue to work with UFO contactees so that they can give consideration to the specific hypotheses that UFO contactees improve their personal lives when they decide to "go public" or to become more open and honest about their UFO encounters.

I wish to thank those persons who have given permission for their names to be used in this paper; I commend them for their cooperation and their courage.

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APPENDIX

Aerial Phenomena Research Organization
1310 East Kleindale Road
Tucson, AZ 85712

UFO REPORT FORM

(Unusual UFO Observations and Impressions)

This questionnaire is designed to gain information in several specific areas: self-information about each participant; a self-description of each participant's views about his/her psychic abilities; a self-description of each participant's views about UFO phenomena; "loss of time" experiences, observation of UFO occupants, or other unusual UFO events; and impressions obtained by each participant about the possible origins, powers, and purposes of those who control UFO phenomena.

PLEASE NOTE; On the last page, there is a section for your signature and the date of completing the questionnaire. Also, each participant is asked to indicate whether his or her name may be used in connection with any publication of results from this study. The personal information will be handled in a confidential manner, and no names of participants will be used in any publication unless participants permit their names to be used.

Thank you very much for your cooperation and your willingness to complete this questionnaire.

I. Self Information (Please complete the following items.)

- 1. Name (Please Print):
2. Address:
3. Age: Date of Birth:
4. Check one: Male Female
5. Please encircle the number which represents the total number of years of your formal education or its equivalent:
6. Please list any special diploma, certificate, degree, or educational award or achievement:
7. Check one: Single, Married, Divorced, Remarried, Spouse is deceased.
8. Title of present occupational position:
9. General duties of present position:



- 10. Other occupational positions which have been held prior to present position: _____

II. Psychic Interests and Abilities (Please complete the following items. If you wish, you may use the back of the page for additional comments.)

- 1. Do you believe you have some ability to gain extra-sensory perceptions (ESP) of thoughts and feelings of other people (telepathy)?
 Yes _____ No _____ Not Sure _____
- 2. Do you believe you have some ability to gain impressions of events or objects which are outside your usual environment (clairvoyance)?
 Yes _____ No _____ Not Sure _____
- 3. Do you believe you have some ability to gain impressions of future events (pre-cognition)?
 Yes _____ No _____ Not Sure _____
- 4. Do you believe you have some ability to influence the physical environment around you (psycho-kinesis or "mind over matter")?
 Yes _____ No _____ Not Sure _____
- 5. Have you ever participated in a scientific investigation of your ESP abilities?
 Yes _____ No _____
- 6. Have you participated in a seance or a group meditation to demonstrate your ESP abilities?
 Yes _____ No _____
- 7. Do you gain some of your psychic impressions through any of these processes?

| | | | | | |
|-------------|-----------|----------|------------------------------|-----------|----------|
| Dreams | Yes _____ | No _____ | Communion with other persons | Yes _____ | No _____ |
| Visions | Yes _____ | No _____ | Communion with other spirits | Yes _____ | No _____ |
| Prayers | Yes _____ | No _____ | | | |
| Meditations | Yes _____ | No _____ | | | |

 Other Processes: _____

- 8. Through what process do you gain most of your psychic impressions? _____
- 9. Have you experienced a spiritual event or religious "rebirth"?
 Yes _____ No _____
- 10. Do you consider your knowledge of parapsychology (study or ESP) to consist mainly (check one or more) in the areas of: personal interest in ESP events of everyday life _____; magazine and newspaper accounts of ESP events _____; empirical investigations of alledged ESP events _____; experimental investigations in the laboratory of ESP processes _____.



III. UFO Phenomena. (Please complete the following items. If you wish, you may use the back of the page for additional comments.)

1. Have you seen a UFO (Unidentified Flying Object)?
Yes _____ No _____
2. If you have seen a UFO, please give the date, location, number of objects seen, and your opinion of what you saw:

3. Are you a member of any organization which gathers information about UFO reports? Yes _____ No _____ If "yes", please list the organization(s): _____
4. Do you believe that most "Unknown" sightings can be explained by the hypothesis of "Misinterpretation of Known Phenomena"?
Yes _____ No _____
5. Do you believe that most "Unknown" sightings can be explained by the hypothesis of "Psychological Phenomena"?
Yes _____ No _____
6. Do you believe that most "Unknown" sighting can be explained by the hypothesis of "Lies or Hoaxes"?
Yes _____ No _____
7. Do you believe that most "Unknown" sightings can be explained by the hypothesis of "Governmental Secret Weapons"?
Yes _____ No _____
8. Do you believe that most "Unknown" sightings can be explained by the hypothesis of "Extraterrestrial Space Craft"?
Yes _____ No _____
9. Have you observed a UFO sighting during which you experienced a "loss of time"? If so, are you now aware of the possible events which occurred during that "loss of time" experience? Please describe your impressions of the event and possible association with a UFO observation:



- 10. Are you interested in the possible use of hypnotic techniques to help remember the "loss of time" events?
Yes _____ No _____

IV. UFO Occupants (Please complete the following items.):

- 1. Have you observed a UFO sighting which included the observation of a humanoid or UFO Occupant? Yes _____ No _____. If yes, please give the date, location, number of UFO Occupants seen, and your opinion of what you saw: _____

- 2. On the back of this page, please draw a figure or figures to represent the UFO Occupants seen.
- 3. Have you communicated, directly or indirectly, with UFO Occupants? Yes _____ No _____. If "yes", have you communicated through writing _____, Speech _____, or through "mental communication" _____?
- 4. If you communicated by speech, could you notice lip movement of the UFO Occupant(s)? Yes _____ No _____
- 5. Was the speech conducted in English? Yes _____ No _____ Other language _____
- 6. If you communicated by writing, do you have any written material given to you? Yes _____ No _____
- 7. If you communicated through "mental communication", were you told by UFO Occupant(s) how this process was conducted?
Yes _____ No _____
- 8. Were any apparent devices (microphones, earphones, etc.) used in the communication by UFO Occupant(s)? Yes _____ No _____
- 9. What information did you give? _____



10. What information did you receive? _____

V. Additional Comments. (Please use this page to describe in more detail, your own psychic impressions of UFO phenomena, including your own impressions of the possible origins, powers, and purposes of UFO Occupants or those who control UFOs.)

Signature _____ Date _____

You may use my name in connection with any publication of these results.

You may use these results, but do not use my name in connection with any publication of these results.

HENRY C. MONTIETH, PH. D.

Henry C. Monteith, Ph.D. is presently employed by the Sandia Laboratories, Albuquerque, New Mexico, where he works in Nuclear Weapons Technology.

He obtained his Master of Science degree from the University of New Mexico in 1970 and his Doctorate degree in 1975. His thesis was entitled: "A Finite Particle Radius in Electrodynamics and Quantum Mechanics."

As a research engineer, he has helped develop RCA computer codes for predicting the performance of color television picture tubes and has had considerable experience writing and improving large mathematical computer codes for his present employer. Prior to his current position, he was involved in projects dealing with the problems of radioactive waste disposal.

Monteith was the first American scientist to openly experiment with the apparent bioplasmatic effects revealed by Kirlian photography. As early as 1971 he was attempting to convince Sandia Laboratories of the research potential of the Kirlian phenomenon. It was three years later that scientists working at the Lawrence Livermore Laboratory discovered that similar methods could be employed to study residual strains in metal.

He attended The First International Congress of Parapsychology and Psychotronics in Prague, Czechoslovakia, June 17-24, 1973, and presented a paper on "Consciousness and Theoretical Physics." Dr. Monteith's researches into parapsychology continues. He is currently at work developing a newly discovered method that may reveal a human potential to observe the physical world without the use of the eyes. Another project involves refining a theory which will connect possible bioplasmatic phenomena with modern theoretical physics.

Dr. Monteith can be contacted at: 1731 Kit Carson, S.W., Albuquerque, New Mexico 87104.



THE UNIFIED FIELD THEORY AND THE UFO

HENRY C. MONTIETH, PH. D.

To any reasonable mind, it appears logical to assume that the universe is one. The concept which concerns the oneness of all things is a common thought in all religious, **philosophical**, and scientific theses which have been produced throughout human history. The spiritual essence in man appears to urge him onwards; forever inspiring him to seek out and verify the ancient truth that all **is**, indeed, **One**. The ancient revelations of the Hindu reveals the following; (Reference 1)

"What is it that ever is?" "Space, the eternal **Anupadaka**."
"What is **it** that ever was?" "**The Germ in the root**." "What is it that is ever coming and going?" "**The Great Breath**."
"Then, there are three Eternals?" "No, the three are one. That which ever is is one, that which **ever** was is one, that which is ever being and becoming is also one: and this is **Space**."

In religion and philosophy it has been sufficient to state the oneness of the universe in a qualitative manner; however, modern day quantitative science will be content only when the unity of the cosmos has been thoroughly stated through mathematical models and the models themselves verified through numerous experiments.

Since the formulation of the theory of relativity physicists have worked relentlessly to devise a theory that would unify all known physical **fields**. First, Electric and Magnetic fields appeared to be separate things, however, the great work of James Clerk Maxwell mathematically **unified** these two fields into one. This has been referred to as the first unification. Einstein spent the last thirty years of his life in a noble attempt to unify the apparently separate fields of **Electromagnetism** and Gravitation. Even though Einstein completed a Unified Field Theory which he accepted as final, it falls far short of the goals which must be obtained before all the results of modern scientific discovery can be unified in a single theory.

The problem of developing a Unified Field Theory was made more difficult by the discovery of interactions at the nuclear and subnuclear level which could not be reduced to effects of **electromagnetism**. Gen-

eral Relativity deals with the large scale structure of space and time; consequently, it gives little help in understanding microcosmic effects. It was for this reason that it became necessary to develop the Quantum Theory. Today, physicists are beginning to realize that the Quantum Theory and the General Theory of Relativity may be two aspects of the same general underlying principle. Einstein never made any attempt to unify Quantum Theory with his General Theory of Relativity because of unhappiness with Quantum Theory. "God does not play dice", as Einstein once said. It is interesting to note that Einstein received great opposition to his theories from the scientific community soon after they were developed; yet, in spite of this experience, he found it difficult to accept the highly successful Quantum Theory. This is a unique example of the fact that even the most creative minds among the human race find it difficult to prevent themselves from falling into the pit of mental fixity!

Steven Weinberg and Abdus Salam have just been awarded the Nobel Prize for bringing about the "second unification", that of the Weak Force and the Electromagnetic Force. This new unification has received a great deal of experimental support, however, certain startling predictions, such as the instability of the proton, remain to be verified. Quantum Chromodynamics is the theory which has been developed to describe the Strong Force. It is hoped that a "Grand Unified Field Theory" will soon be developed which will unify the Weinberg-Salam Theory with Quantum Chromodynamics. Accelerators are now being designed which will produce more than 100 GeV and by the end of the century accelerator energy will approach 6000 GeV. At these new levels of energy, many surprises will certainly be waiting for the physicists. It is possible that all of the accepted theories of today will fall and new theories will have to be formulated to take their places. The modern day physicists, who are getting all of the publicity, have found no way to combine Gravity with Quantum Mechanics, not to mention combining it with other forces.

Thus far, most physicists are unaware of the work of a blind German physicist whose name is Burkhard Heim. Apparently Mr. Heim has succeeded in developing a theory which might be the Grand Unified Field Theory which most physicists are looking for. Some results of Mr. Heim's theory will be discussed in this paper as well as some ideas presently being considered by the author. The author believes that Heim's theory is of great significance and should be brought to the attention of American physicists and the UFO community. Heim briefly described his theory in a 1977 paper (reference 2) and some mention of his work was made by Illobrand von Ludwiger in the 1978 MUFON Symposium Proceedings.

For more than thirty years UFOs and the phenomena associated with them have been thoroughly documented and studied. (Reference 3) It can now be accepted without question that alien spacecraft produce both electromagnetic and gravitational phenomena. This suggests that they have understood the unity between electromagnetism and gravity for a

very long time and have become highly sophisticated in the application of this knowledge and **understanding**. It is obvious that no space travel worthy of the name can ever be achieved by the crude, brute force **methods** of rocket propulsion. The **UFOs** utilize techniques which enable them to work with the natural forces rather than against them as is characteristic of so much of **earth's** technology and especially that technology which is related to **space**. Man, of earth, is a victim of time; therefore, it will be difficult for him to reach a star less than 100 light years distant, not to mention those stars which are more than 100,000 light years distant. Finally, the theory of Relativity limits man's ability to obtain a velocity greater than the velocity of light not to mention the fact that matter distributed throughout space may impose an additional velocity limitation of perhaps 10,000 **Km/sec**. It is apparent that alien space beings do not suffer from these **limitations**; consequently, this implies that our theories and our fundamental ideas of space and time will have to be drastically modified before we will be able to comprehend the scientific and spacecraft engineering techniques so commonly used by the visitors to our **planet**.

Mr. **Brukhard** Heim suggests that the first, and perhaps major restriction which we have placed upon ourselves is that of **space-time**. In other words, we are limited to four **dimensions**. Each time that we have introduced ourselves to a higher dimensional space we have discovered greater freedom in our ability to manipulate the material **world**. **When** flight was discovered, for example, our methods of travel moved from two dimensions to three dimensions. This enabled us **to traverse** a continent in hours whereas previously months were **required**. When Einstein introduced time as the fourth dimension, we entered the world of the atom where we discovered the atomic bomb, nuclear power, the laser, and an entirely new world of elementary particles which make up a micro-universe. It is no mystery that nature has the ability to organize and disorganize matter. Let us assume that this process of organization and **disorganization** carries out its action in another dimension, say the fifth dimension. In the fifth dimension we can represent the positive direction as the direction of creation or organization and the negative direction as that of annihilation or **disorganization**. The fifth dimension is indicated by the letter ϵ and is illustrated in Figure 1.



Figure 1

Matter is constantly being organized and disorganized in a cyclic manner... Birth, life, and rebirth seem to constitute a universal principle which performs **its** action along the fifth dimension. We may also call the fifth dimension the "Dimension of **Entropy**". The fifth coordinate ϵ then defines the "State of Organization" of a material system. Heim calls this dimension the "**Entelechal Coordinate**". (Reference

4) Since the organization of a system changes with time, the entelechal dimension can be associated with time. The organization of a system is often used to produce a physical effect as is the case with a piezoelectric **crystal**. Such a crystal consists of a group of atoms in a highly organized state. **When** the crystal is struck with a **hammer**, the state of organization of the atoms is changed and the crystal expresses this fact by producing an electric voltage. Another example is the Kerr effect where a change in the **crystal's** state of organization varies the index of refraction for light moving through the **crystal**. Thus, it appears that organization has all of the characteristics necessary for it to qualify as a dimension.

The world of space and time, which was mathematically **formalized** by Einstein and **Minkowski**, is confined by the coordinates of length, width, height, and time and constitutes the world of corporal things, called by Heim the "**Soma-World**". Heim believes that two more dimensions exist which are perpendicular to this **somaworld**: one of which is the dimension of organization or the fifth dimension and another is the sixth dimension which we shall call the "**Dimension of Evolution**".

It is well known from experience in the material world that systems, such as living systems, not only organize and disorganize, but evolve as well. Thus the sixth coordinate can be defined as that coordinate which controls the evolutionary states (actualization directions) of material structures which are organized in the fifth dimension. The structures which are organized along the fifth dimension also change with time and thus have many different states along the time axis even though they remain within the same relative structural frame. For example, a human being is organized in a certain way even though he progresses through the states of childhood, middle age, adult and senior citizen. The evolutionary state is denoted **by** and is called by Heim the "**Aonic World Coordinate**".

As an aid to the understanding we will try to picture this new **six** dimensional space: Assume that at a specified instance of time, all states of the universe can be represented by many picture frames on a circular filmstrip. In other **words**, each picture frame **illustrates** a momentary state of the universe or the three dimensional somaworld. System organization is embedded in the three dimensional world and is, therefore, perceivable in this world even though it acts independently. The location of a house is not being changed while it is **being** built, consequently, the location of the house is independent of its organization. Thus three dimensional space, which we will call R_x , and the fifth dimension, which we shall call x_5 , can be represented together, as in Figure 2, since they are perceived together.

A point in time is the circular origin of each filmstrip. The progression of time forms an axis about which many **filmstrips** can revolve. At the beginning of the universe, that is at time $t = 0$, there existed only a single filmstrip as illustrated in Figure 3. As the universe progressed in time, after its birth, more and more filmstrips

formed as layers over the original filmstrip as shown in Figure 4. Thus the universe maintains a record of all of its previous states, represented by earlier filmstrip layers, and builds new filmstrips based on the experience obtained from the previous states or filmstrips. This process of building filmstrips, though complex, is not unlimited because there is a maximum number of filmstrips that can exist for any given universe. Such filmstrip layers, known as a "Filmblock" are illustrated in Figure 4.

Systems may **organize** and disorganize within the context of a single filmstrip. The level of organization is indicated by the value of x_5 ; however, the process of moving from one filmstrip to another filmstrip or from one level of organization to another level of organization is indicated by the evolutionary or sixth dimension. It is logical to assume that the sixth dimension is the dimension along which the mind acts because the mind has the ability to change the level of organization of a system.

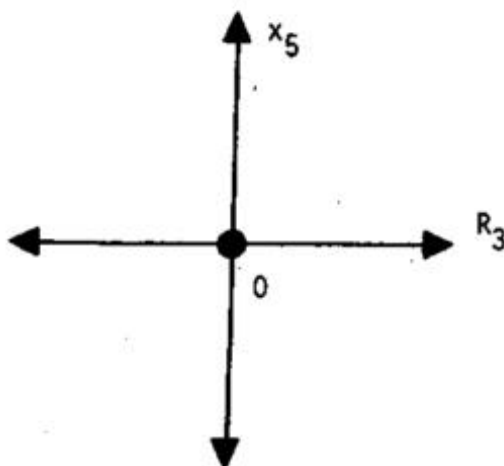


Figure 2

R_3 AND x_5 ARE BOTH PERCEIVABLE IN THE SOMAWORLD

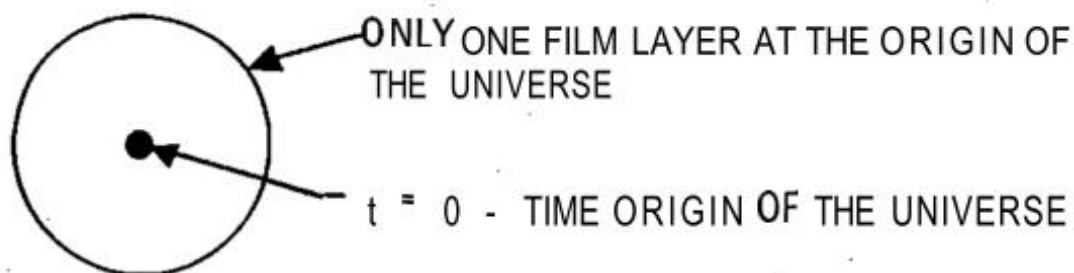
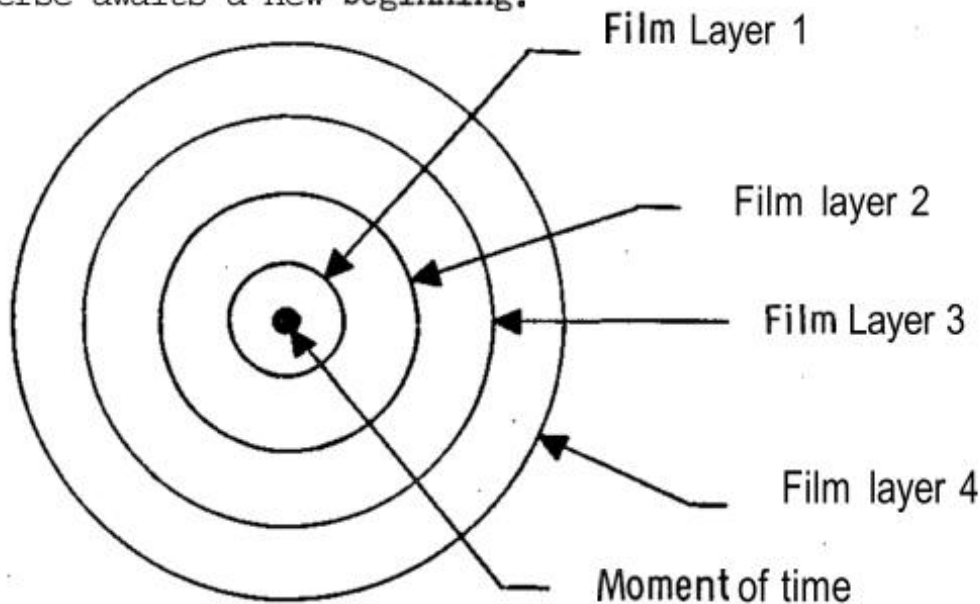


Figure 3

If the level of organization of the universe does not change, it may still progress in time, however, the universe will not evolve. The same state of organization will be extended along the dimension of time and may take on different values of that state of organization, **that is**, such things as birth, life, and rebirth can occur at the same level of **organization**. This is illustrated in Figure 5. Refer now to Figure 6 where the life cycle of the universe is **depicted**.

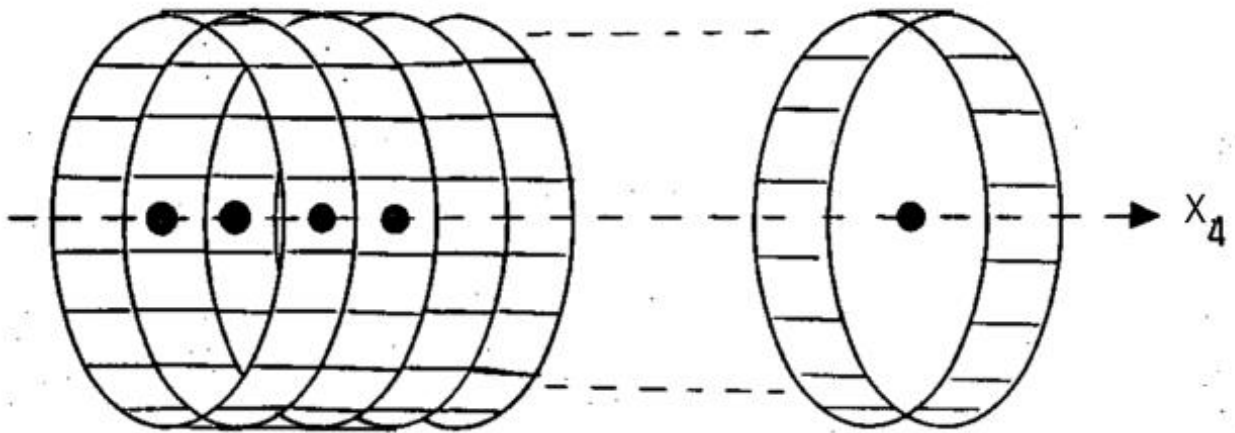
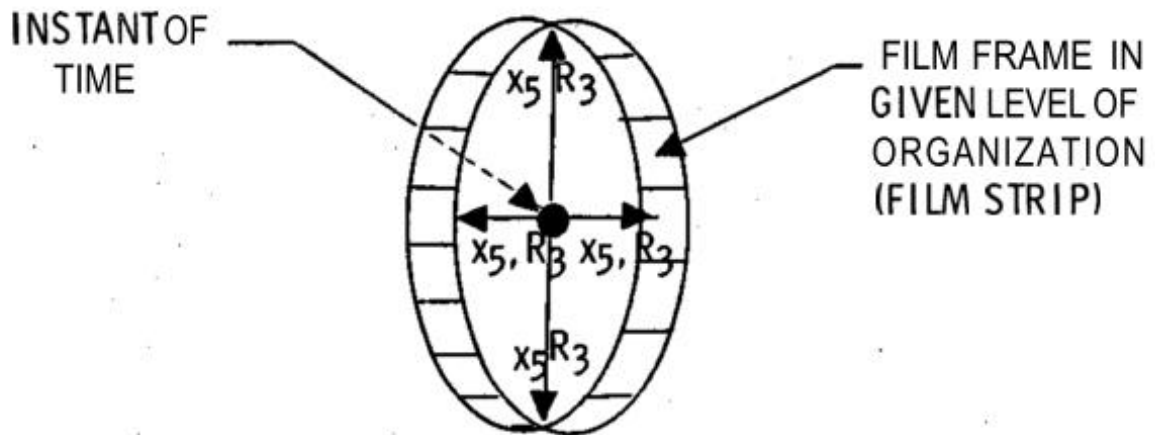
The life of the universe begins at the world origin where space, time, organization and evolution do not exist. The six dimensional world, R_6 , is not, the somaworld R_3 is not, thinking is not (x_5 and x_6 are zero) and time has not yet begun ($t=0$). Suddenly there is a disturbance in the universe and that which was one becomes divided. At this point, time, space, and thought begin to appear. The single film-strip of states, characterizing the initial state of the universe begins to evolve and to expand. The universe is now in the expansion phase, the one filmstrip becomes two, the two become three and more and more strips are added as the universe expands, time increases and organization becomes more **complex**. As the universe expands it also evolves, building up new states of existence based upon the experience of all previous states of existence. Finally, after eons of expansion, the highest evolved state of evolution is reached, all that can be experienced was actualized and culminated through countless material entities formed from the body of the universe. Further expansion is now impossible, additional states of existence cannot be formed, **thus**, the universe begins to re-fold, time and space seem to run backwards, and as the universe contracts, it digests all that has been experienced before. Finally, at the end of time, space and thought cease their activity and the universe awaits a new **beginning**.



EACH FILM LAYER REPRESENTS A LEVEL OF UNIVERSAL ORGANIZATION

THE UNIVERSAL FILMBLOCK

Figure 4



LEVEL OF ORGANIZATION PROGRESSING IN TIME

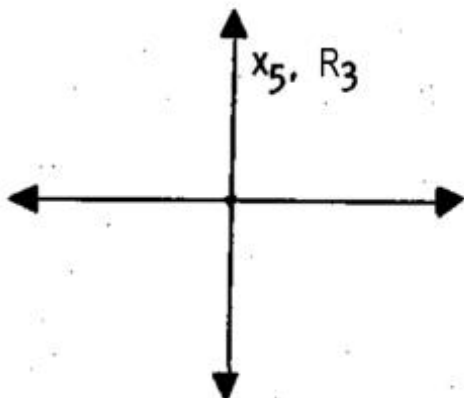


FIGURE 5

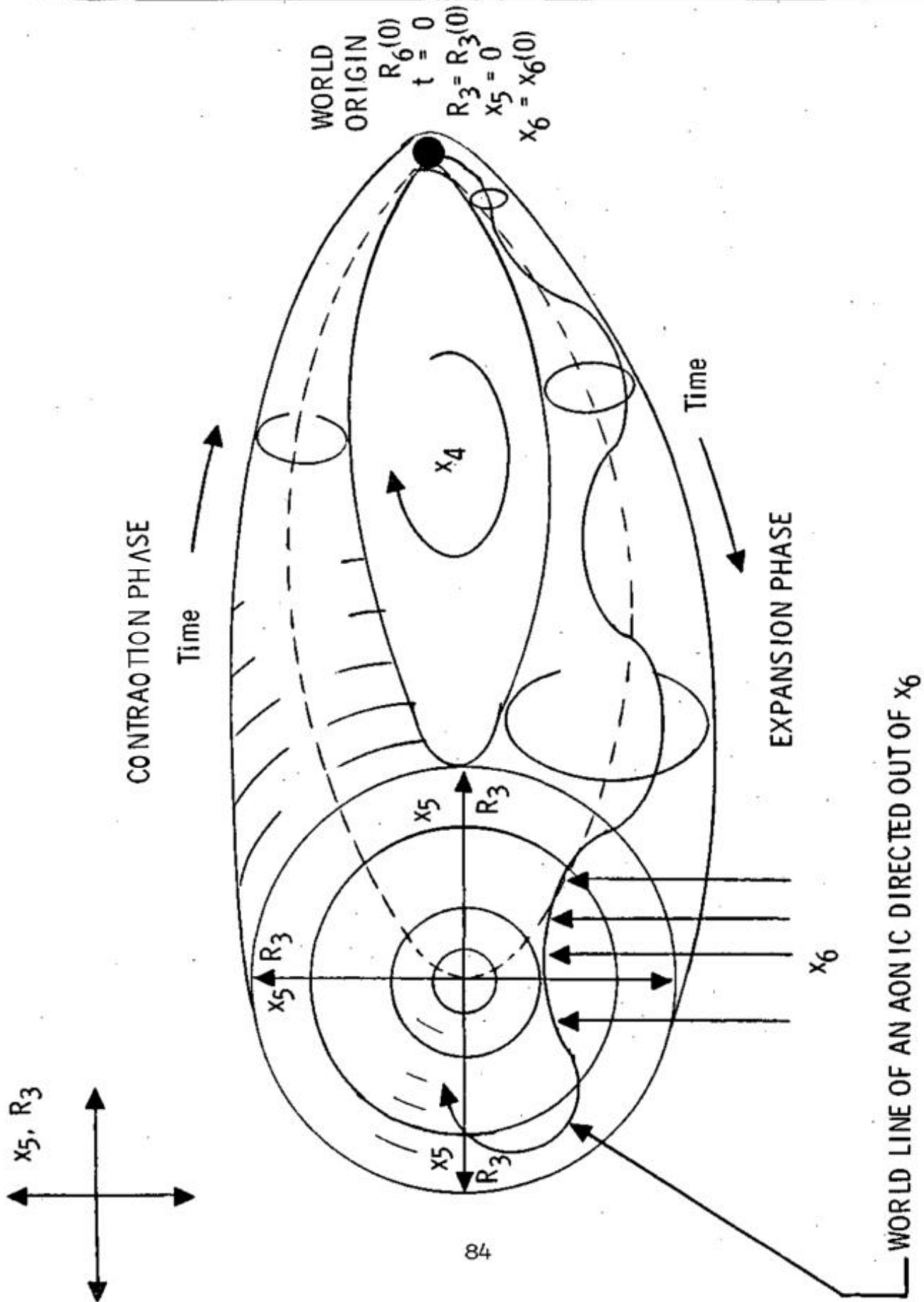


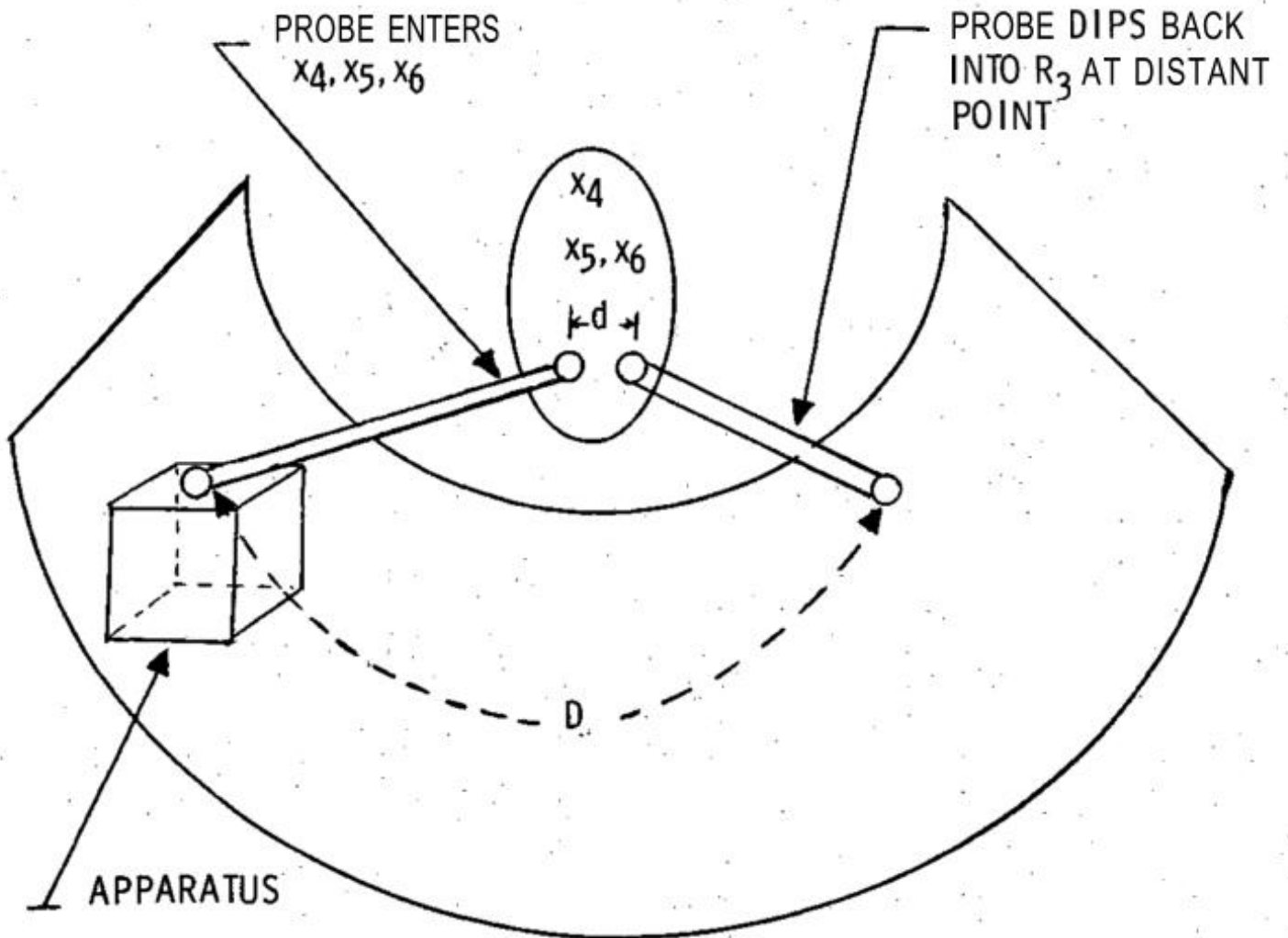
FIGURE 6

Figure 6 also illustrates a six-dimensional world line which is under the control of the x_6 coordinate. This world line may represent the path of experience of some entity which begins at a primitive state of evolution in the universe and evolves throughout the history of the universe and gradually experiences all the levels of evolutionary awareness that it is possible for the universe to develop. Such a path is followed by each individual soul, so to speak. For example, each of us who are alive on this planet today are experiencing some elementary level of evolution. We must remain at our given levels of evolution until we have learned all that it has to teach us, then we will evolve to a different level by action taken along the sixth dimension.

The coordinates x_5 and X_5 are referred to by Heim as "Transdimensions". In general, ordinary human beings have no sense organs which can detect these transdimensions, however, they are genuine world dimensions that can produce real physical effects. These additional transdimensions extend the dimensionality of space and thereby make it possible to reach the sheath of the Minkowski light cone in ways which are inaccessible to those who are limited by the restrictions imposed by a four-dimensional space-time. This means that there is a theoretical possibility of "traveling around space-time", so to speak, and overcoming arbitrarily large distances in what appears to be a short space and a short time.

It may be possible, because of R_6 , to design a device which is equipped with an interdimensional probe. It may be possible to organize and manipulate the device in such a manner as to allow the probe to be transferred from the x_1 , x_2 , and x_3 coordinates of R_3 into the X_4 , x_5 , and x_6 coordinates of a three dimensional space that includes the transdimensions which we will call I_3 . The probe can then be moved to a nearby point in I_3 and then dipped back into R_3 . When it re-enters R_3 it is found to come out at a point which is very far from the place where it entered R_3 . Thus, moving a short distance in I_3 was equivalent to moving a very long distance in R_3 . This concept is illustrated in Figure 7. Once the probe has re-entered R_3 at some distant point from the apparatus, it can participate in physical occurrences, arbitrarily change its state of organization (shape etc.), appear in many places, and appear and disappear at will. An excess of energy will be released when the probe re-enters R_3 at some distant point from where it entered. The energy released will perhaps be equivalent to that which was conserved by not having to expend it in normal R_4 restricted travel. In other words, it does not take as much energy to travel from one point to another in I_3 as it does in R_3 ; therefore, the difference between the energy expended to get between points by R_4 travel and that expended to get between the corresponding points in R_6 travel is released when the probe re-enters R_3 from I_3 at some distant point.

Now it is known from Special Relativity that a body moving away from an observer at a very high speed, comparable to the speed of light, appears to shorten in the direction of its motion. The theory also indicates that the clocks on the object moving away from the observer run



THE TWO POINTS ARE VERY CLOSE IN x_4, x_5, x_6 BUT VERY FAR APART IN R_3 BY THIS MEANS VAST DISTANCES CAN BE OVERCOME.

Figure 7

slow compared to the clocks of the observer. This is the reason for the famous twin paradox where the twin who leaves the earth on a very fast spaceship and travels to a distant star and returns over a time span of thirty years, will still be very young, having aged only two or three years, while his twin brother who remained on earth will be an old man, perhaps in his seventies.

Heim's theory, because of R_6 , allows for a speed which is much greater than the velocity of light. In the six-dimensional theory, as the velocity of a space ship becomes large compared to the speed of light, R_3 contracts almost to zero. Indeed, R_3 becomes incapable of containing the spaceship and it must, of necessity, jump in I_3 , the space of time and the transdimensions. If the velocity of the spaceship becomes so large that the speed of light can be neglected then it is expressed almost entirely in terms of the transdimensional velocities. In other words, the velocity of the spaceship becomes so large that its motion becomes sympathetic to the organizational intensities in the I_3 subspace of R_6 . This then causes the spaceship to "jump over", so to speak, because it wishes to move to that condition which is like unto its own.

It can be shown by mathematical reasoning that a gravitational field can produce a change in reference frame. This implies that by simply surrounding a spaceship by a strong gravitational field we might be able to make it jump into I_3 the same as it would if we gave it the proper velocity. It is impractical to give the spaceship the proper velocity; however, it may be possible to induce a proper gravitational field around the spaceship. Both the strength and the organization of the gravitational field induced around the spaceship will determine if the spaceship will be able to jump from R_3 into I_3 . Since the transdimensions have an effect in R_3 , it is logical to assume that as a volume in R_3 decreases, the organization in that volume will increase as the velocity of the spaceship increases. In other words, a change in organization is associated with a contraction in volume! This certainly makes good sense in nature: for example, a star is created by the condensation of gases. As the gases condense, the atoms and molecules in the gases simultaneously organize.

Burkhard Heim, by using methods unknown to the author, has mathematically calculated that the velocity of gravitational waves is $(4/3)c$, which is obviously greater than the velocity of light. The author has also derived this result using his own methods. It is also interesting to point out that Nicola Tesla came to this same result more than eighty years ago. (Reference 5) Even though attempts have been made to detect gravitational waves (reference 7), they have never been detected to anyone's satisfaction not to mention measuring their velocity. Consequently, we will have to wait for future advances before this theoretical determined velocity for gravitational waves can be experimentally verified.

The equations for gravitational waves suggest that they can effect

the organization of a system. Gravitational waves, acting upon a statistical system, will cause the organization of that system to move towards a higher or lower evolutionary state in the sixth dimension. Gravitational wave perturbations can shift the statistical probability of the states involved in any process. Heim suggest that gravitational waves are suggestive of parapsychological events. (Reference 8) It appears that the mind of a strong psychic is able to generate gravitational waves and effect the organization of a system. Here one is reminded of the work of Dr. A. P. Dubrov, a Russian physicist who believes that gravitational waves and psychic events are connected. (Reference 6)

One can expect paranormal events to occur in the neighborhood of any device which is generating gravitational waves. Experiments indicate that psychokinetic mediums can generate temporary gravitational field disturbances which can, in turn, change the organization of energetic structures corresponding to the patterns produced by their imagination. This reorganization, caused by the mind in some unknown fashion, seems to be correlated with the sixth dimension. These are all qualitative deductions, based on experience and experiment, which must be later supplemented with quantitative and highly sophisticated techniques of mathematics and experiment. We will now try to discuss in a simplified way some complicated results obtained from mathematical reasoning which suggest a new form of space travel.

Heim's theory suggest that it is probably impossible to screen off gravity or to generate anti-gravity. On the other hand, Heim's theory also indicates that acceleration fields can be generated by the application of the so called "Contrabaric Equation". Heim's theory of elementary particles is based on his new theory of gravitation. Since this new theory has been very successful in predicting the masses of elementary particles, there is some confidence in the suggestions made by the theory concerning gravitational propulsion.

The contrabaric effect is a consequence of the theoretical conclusion that the mass of a body is a function of one's distance from the body, that is, $m = m(r)$. In other words, it can be said that each inertial action upon a spaceship depends upon its position from the body around which it is flying.

In Heim's theory it is possible to express the electrical potential as a function of quantized gravitational potential and vice-versa. This means that the Maxwell equations, which express the relationship between electricity and magnetism, and the Poynting vector of radiation, which expresses the power at which electromagnetic waves are radiating, can be expressed in terms of the gravitational intensity or gravitational field acceleration. The amount of gravitational acceleration acting upon a spaceship depends on the mass of the spaceship, the mass of the planet or star near the spaceship and the square of the distance between them.

Heim's theory suggests that it is possible to operate upon special

kinds of electromagnetic field radiation to cause it to generate gravitational field acceleration. In other words, it is possible to generate a specific kind of electromagnetic radiation, and organize it in the proper patterns, so that it will create a gravitational effect. Burkhard Heim, so far, has not published his contrabasic equation in full form; however, the skeleton equation which he has published gives some interesting hints about the nature of the gravitationally driven spaceship. We will give the equation here for those who can understand it and describe it in general for those who cannot.

According to Heim's theory then, electromagnetic radiation must be distributed throughout the spaceship in a certain organized pattern before a gravitational field can be generated around it. The power radiated by an EM field is given by the Poynting vector:

$$\vec{P} = \vec{E} \times \vec{H} \quad (1)$$

where E is the electromagnetic field intensity and H is the magnetic field intensity. The radiation field must be organized in a pattern sufficiently complex to involve the 5th and 6th dimensions. The complexity of the radiation pattern surrounding the spaceship is equivalent to placing the spaceship in a different reference frame. The new reference frame, in which the spaceship is placed, is equivalent to that which would be produced by a strong gravitational field or a relative velocity. Let us make the following definitions:

$$z = kDt \quad (2)$$

$$k = \left[\frac{(2\pi r) \cdot (\vec{E} \times \vec{H})}{M_0 V} \right]^{1/3} E(t) \quad (3)$$

where in these equations t is the time, D is an adjustment parameter whose range is $0 < D < 1$, M_0 is the mass of the spaceship, V is the volume of the spaceship, and E(t) indicated how efficiently the spaceship can transform electromagnetic power waves into gravitational acceleration and gravitational waves. If we let b(z) be the gravitational acceleration generated by the electromagnetic power waves in the ship then the expression which has been obtained by Heim for this generated field is:

$$b(z) = C \left[e^{-z} - e^{z/2} (\cos z \sqrt{3} - \frac{1}{2} \sqrt{3} \sin z \sqrt{3}) \right] \quad (4)$$

Equation (4) indicates that the generated acceleration field has harmonic components. This implies that the electromagnetic field distributed over the spaceship must be properly synchronized and harmonized. This is going to create problems in the attempt to produce the

first working model. Of course the main problem in creating the first working model is to produce the correct field pattern. The geometric symmetry to which this field pattern must conform is far from obvious and will take considerable effort to work out.

Since the first term in equation (4) rapidly approaches zero as z increases, we will ignore it and concentrate on the second term. Thus, in order to create a large acceleration field, we must have a large value of z . Equation (3) tells us that we will have a large value of z and, consequently, $b(z)$ if the spaceship has the following characteristics:

1. A strong radiation field
2. A very high efficiency
3. A large value of the following ratio:

$$R = (2\pi r)/V \quad (5)$$

This ratio will be large if the spaceship has a large radius and a small width. This is exactly the configuration of a flying saucer!

4. The mass of the spaceship should be small, relatively speaking.

Now it should be pointed out that when Heim derived these equations he was not aware of the characteristics of the UFOs. (Reference 9)

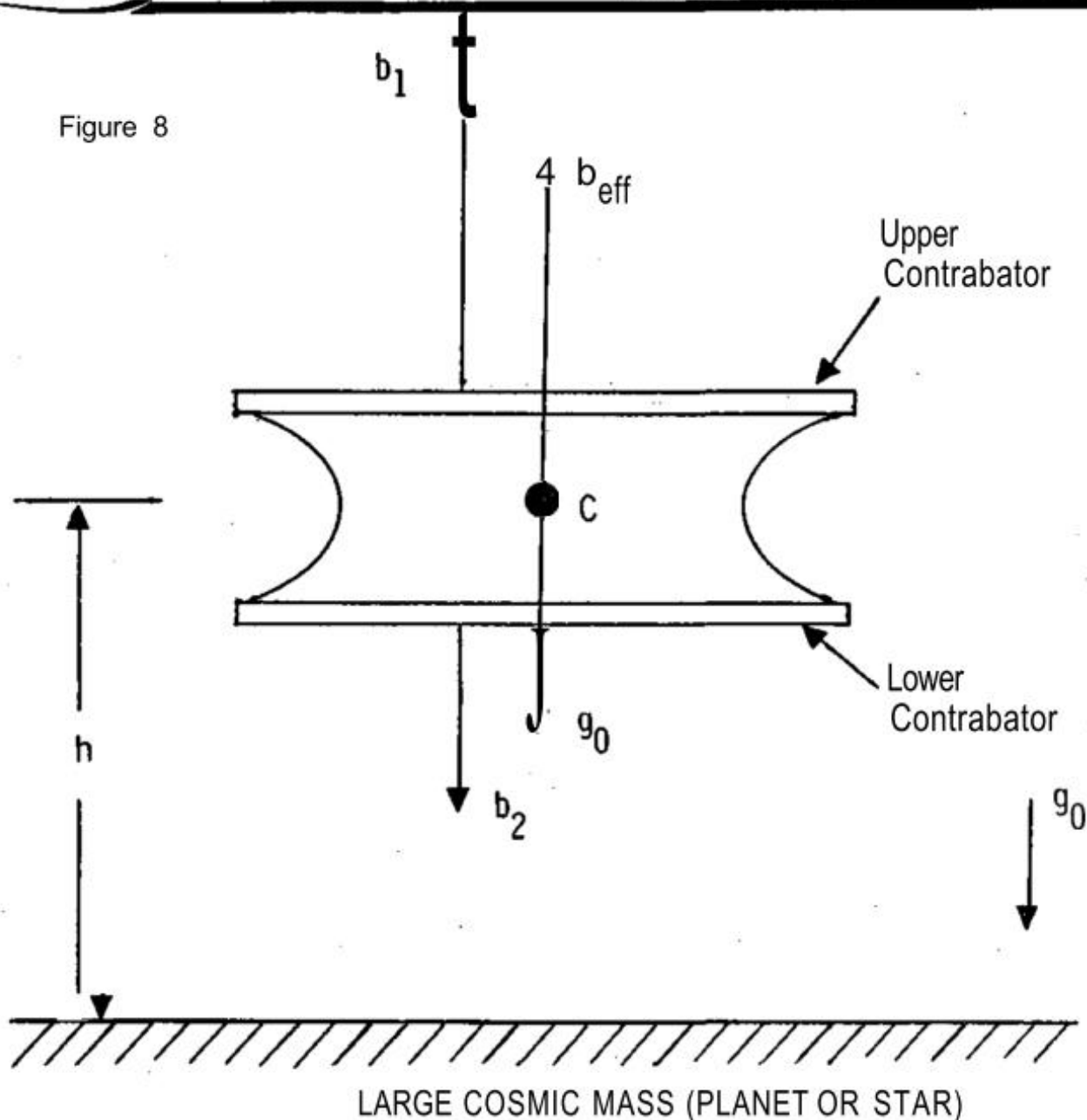
It is expected that the gravitational waves emitted by the spaceship will have a sawtooth type pattern when rectified. Since gravitational waves influence all matter it is reasonable to suppose that the intensity of the waves will decrease very rapidly with increasing distance from the spaceship. Weber's apparatus for detecting gravitational waves should be able to track UFOs under the following conditions:

1. The device is quite close to the spaceship.
2. The device is tuned to the proper frequency.

The acceleration field which is produced by a saucer shaped spacecraft will superimpose itself on the static terrestrial gravitational field. This will cause the weight of the spaceship to be different. In the contrabatic equation (4), the term containing e^{-z} will be neglected. Only the harmonic part will be important in creating the artificial gravitational field. The mean value of the acceleration produced by the harmonic part of the equation will have the amount $b = C$. If $Dt \gg T$, the period of the gravitational waves produced by the planet or star near the spaceship, then with sufficient field intensity the spacecraft can be made to accelerate in the direction of b .

Two contrabators will be needed in order to construct a spacecraft with the proper control and maneuverability. Each contrabator will produce an acceleration field opposite to that of the other. In this man-

Figure 8



h = Height of the spaceship

g_0 = Acceleration field of the cosmic mass

b_1 = Acceleration field produced by upper contrabator

b_2 = Acceleration field produced by lower contrabator

b_{eff} = Effective acceleration field

$$b_{eff} = b_1 - g(h) - b_2 = -g_0$$

Above equation holds if spaceship at rest in gravitation field of cosmic body

ner the spaceship is given the capability of accelerating towards or away from a cosmic body. An electronic control device will have to be devised which can control the strength of the field produced by each contrabator. Figure 8 illustrates the general contrabator configuration which will probably be necessary to construct a spaceship of the type used by aliens visiting the earth. Inertial effects will never be experienced by the occupants of such a craft because the gravitational acceleration fields act on every elementary particle in the bodies of the ship and the astronauts. The ship will always effectively be in free fall. Thus the occupants of the spacecraft will feel nothing when the ship rapidly changes direction, stops instantly, accelerates quickly, etc. This explains why some alien spacecraft appear to have erratic motions. It is apparent that a part of the spaceship must rotate in order to give it gyroscopic stability. Rotary motion has very often been described during a UFO sighting and sometimes the grass at the spot where a UFO landed is twisted in swirl like patterns which indicates rotary motion. A vehicle constructed with contrabators and supplied with a rotational motion will remain stable even if masses internal to it are shifting about.

Just as gravitational waves can be produced by electromagnetic radiation so can electromagnetic radiation be produced by a gravitational field. Heim defines a "Dynabaric Vector Operator" D which can operate upon a gravitational field to produce electromagnetic waves as follows:

$$D:P = E X H \quad (5)$$

Heim has never released the full details of the operator D , however, he will probably discuss them in the second volume of his book which is now being written and may appear in 1981. The author is presently working on his own version of these formulas which hopefully will be ready by 1982.

All individual portions of matter, such as atoms, molecules, small particles, etc., have their own gravitational field Γ_m . Large guidance fields, such as the earth's gravitational field T act upon these smaller gravitational fields T_m . For example, an object falling from the sky has its own gravitational field T_m which is being acted upon by the earth's field Γ . It turns out that the dynabaric operator can operate upon the inherent gravitational fields of given masses to produce electromagnetic radiation. When the dynabaric operator operates upon an ion, or a charged particle, for example, primary radiation may be emitted as photons and secondary radiation emitted as the air molecules are ionized.

One thing which all UFO sightings have in common is that the supposed spaceship is always surrounded by an intense field of light. Since the object is propelled by producing its own gravitational field, it must be continuously emitting gravitational pulses from its surface. These gravitational pulses strongly ionize the atoms and molecules in

Figure 9

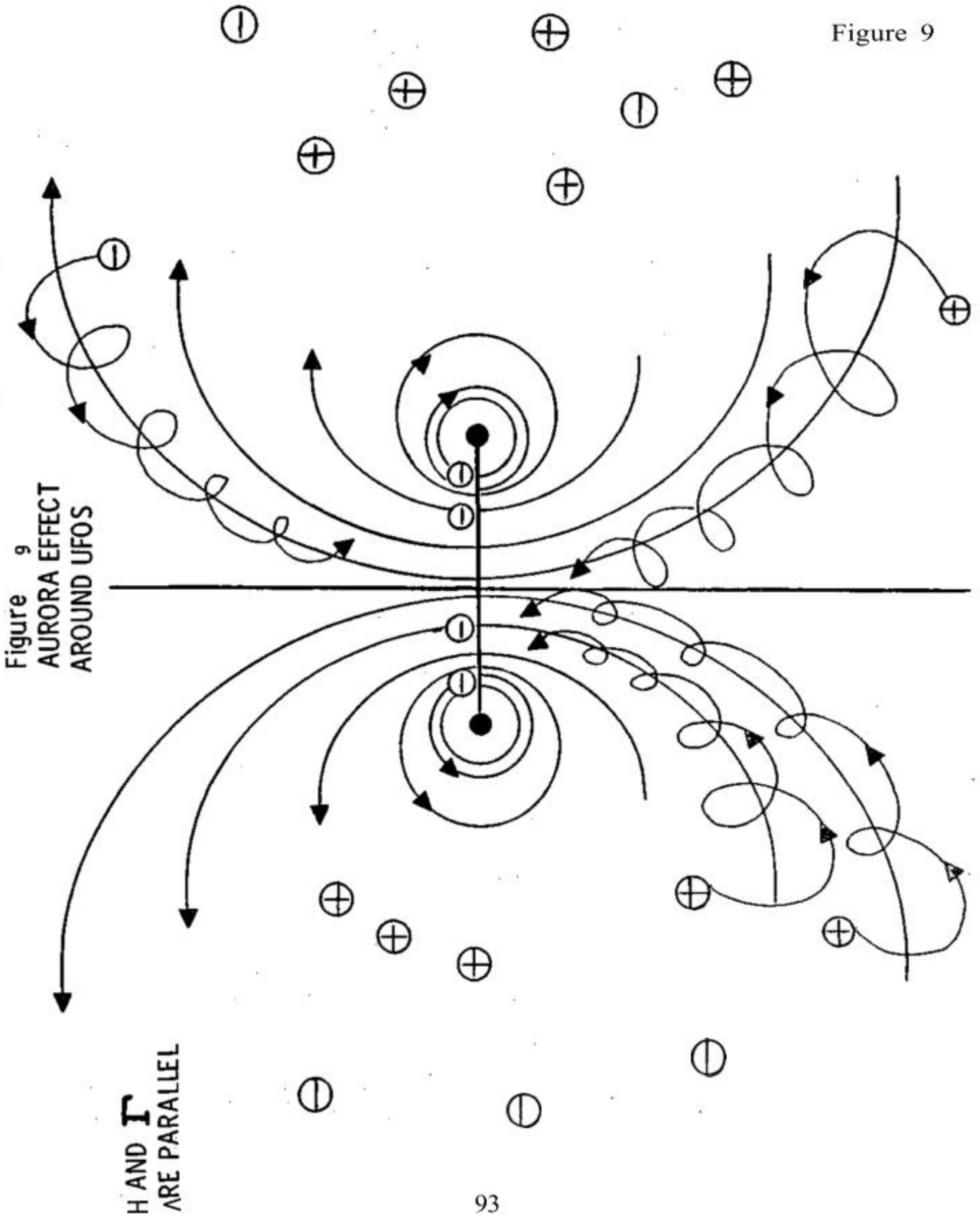
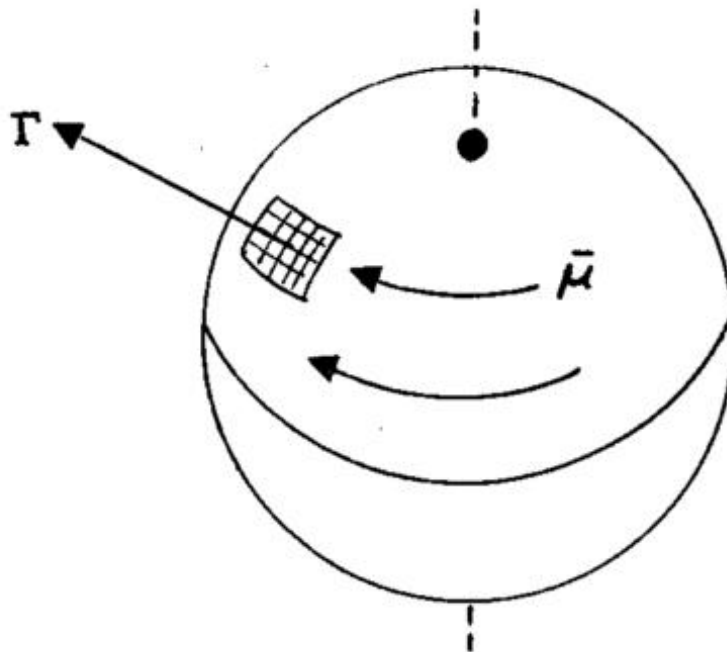


Figure 9
AURORA EFFECT
AROUND UFOs

H AND I
ARE PARALLEL

the neighborhood of the spacecraft, causing them to emit intense photon fields that make the UFO look like a star! See Figure 9.

There is another field associated with the gravitational field of a massive body which has never been confirmed by modern science. This field was first postulated by Oliver Heaviside (reference 10), as far as the author can determine, around 1890. It was again postulated by Wilhelm Reich around 1923 (reference 11), again by Burkhard Heim in the 1950s and has been treated quite extensively by Coster and Shepanski in 1969 (reference 12). This field, called the "Mesofield" by Heim, cannot be detected so long as it maintains a static condition and has no circulation. If it contains circulation it will then produce a gravitational field. It is possible that gravitational fault lines are caused by abnormalities in the earth's mesofield. The mesofield runs parallel to the earth's equator and is illustrated, along with the direction of the gravitational acceleration, in Figure 10.



THE MESOFIELD $\bar{\mu}$

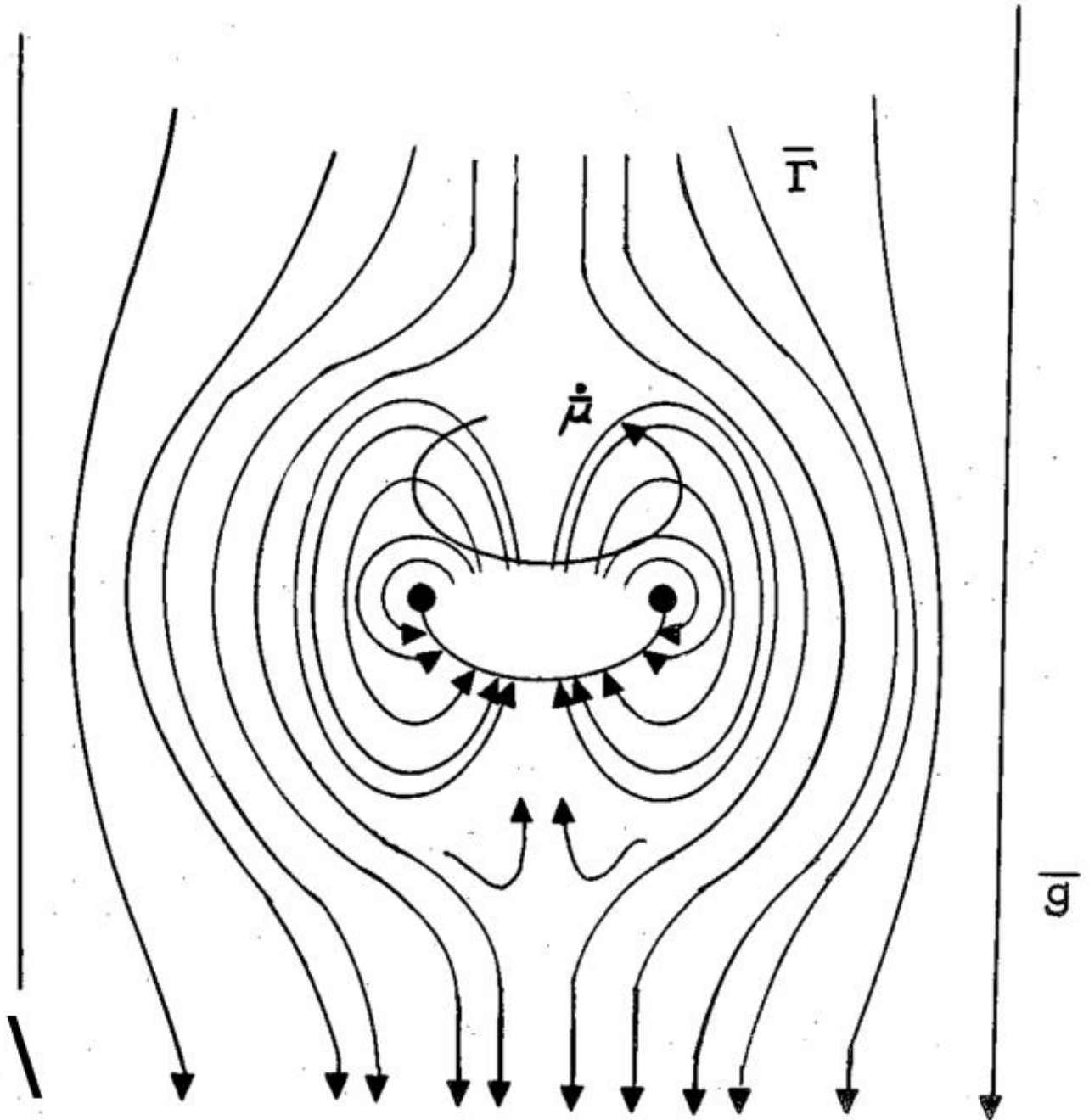
Figure 10

The gravitational field set up by the spaceship will also generate a mesofield which is mathematically expressed by the equation

$$\mu = a \nabla \times \Gamma . \tag{6}$$

In Figure 11, the gravitational field, Γ , generated by the spaceship is shown superimposing itself upon the gravitational field g of a cosmic body. The mesofield, generated by the spaceship, is also shown in the figure. The resultant gravitational field **just** below the spacecraft

Figure 11
 Contrabator in a
 Guiding gravitational
 Field



will probably be strongly attractive and the gravitational field will be amplified just below the rims of the contrabators.

It has been observed by many that when UFOs fly just above the tree-tops, the trees are forced to sway as if they were being subjected to a storm. The reason for this is that the gravitational attraction upon the trees, provided by the earth, is strongly modified by the presence of the gravitational field generated by the spaceship. Thus, the resulting attraction upon the trees has a horizontal component which causes the trees to bend. The effect of a UFO upon a field of trees is illustrated in Figure 12.

Heim's theory also indicates that a contrabator can generate a strong magnetic field intensity H . This magnetic field intensity H will be generated if the gravitational field is not static or if it has a rotational component. Heim has derived a somewhat complex equation to express this relationship between the gravitational field and the magnetic field intensity H . (Reference 13) The gravitational field of a cosmic body near a UFO also contributes to the magnetic field intensity produced by the contrabators. It turns out that the magnetic field intensity field lines H and the gravitational field lines are parallel. Thus, it is possible to determine the orientation of the gravitational field lines around the spacecraft by using a magnetic field detector.

It is well known that ions in motion will **move** in spirals around magnetic field lines and, consequently, around gravitational field lines since they are parallel to the magnetic field lines. A very dense field of ions is present in the neighborhood of intense magnetic fields. Since these ions are moving in rapid **circular** motion, there will be many collisions between them. These collisions, in turn, produce aurora-like light phenomena in the regions where the magnetic and gravitational lines are most dense. This effect has been **observed** in many sightings and in some photographs of UFOs. See Figure 9 for an illustration of this effect.

The gravitational waves produced by the contrabators will accelerate free electrons causing charge separation forces to be produced. This is then equivalent to a strong electric field intensity. If the gravitational waves are sufficiently intense the electric field produced as a result may be so strong as to **over-ride** other **electric** fields in the neighborhood. This will cause the electrons which are normally following the weaker fields to leave their original path of motion and follow the field lines set up by the contrabators. For example, it has commonly been observed that the electric circuits of an automobile always fail when they are too close to a UFO. The reason for this is that the electrons, which normally follow the conductors in the automobiles circuits, are literally jerked away from the automobile circuits by the very strong electric field intensity set up by the contrabators. This causes the electric circuits of the automobile to act as if they were open.

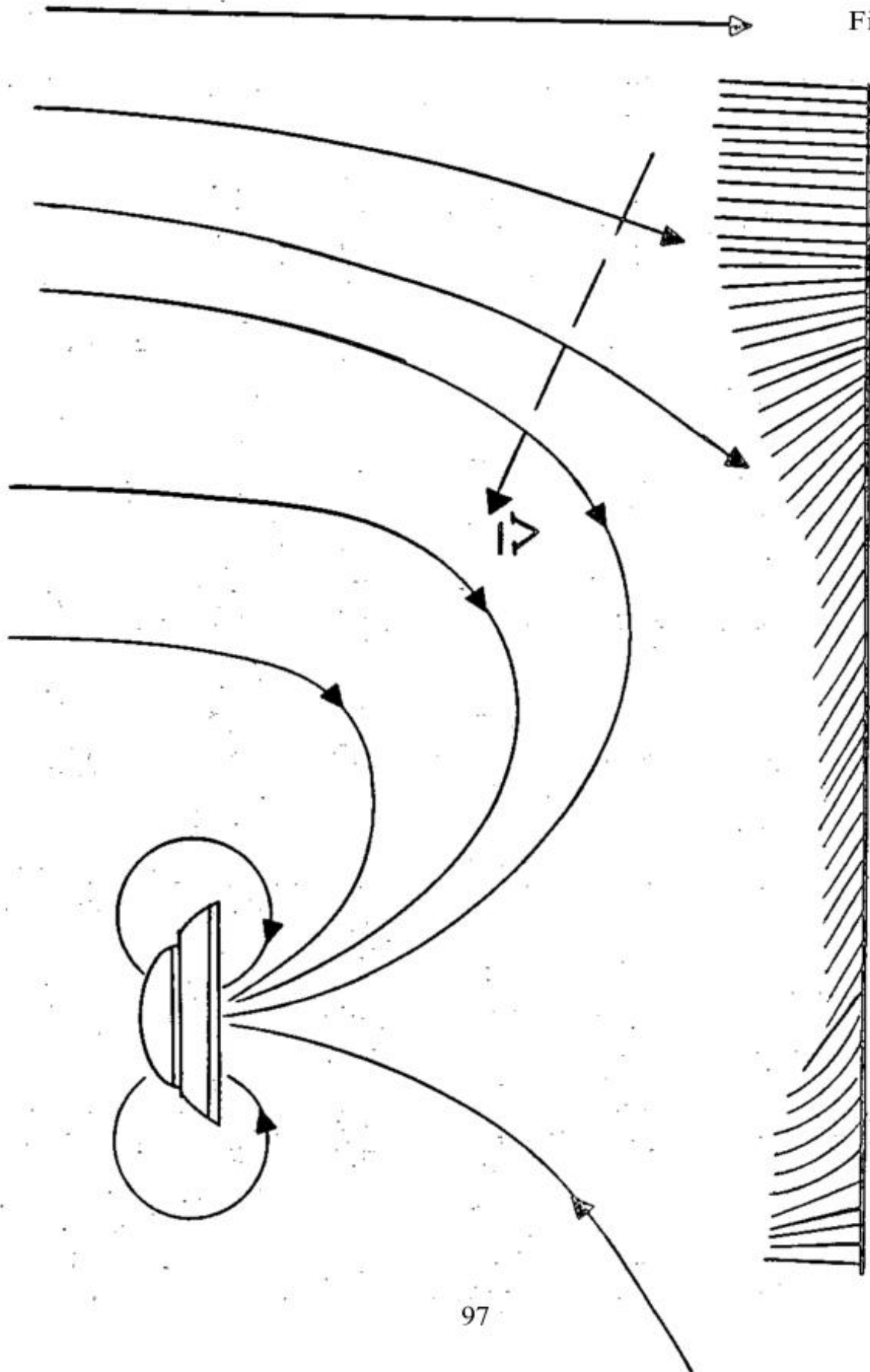


Figure 12

Figure 12. GRAVITATIONAL SPACE MACHINE (UFO) AFFECTING A LINE OF TREES

The dynabarc effect tells us that when gravitational waves irradiate matter, the gravitational field energy is transformed into electromagnetic energy. This means that the dynabarc effect diminishes the gravitational field around a mass. After the dynabarc effect has been removed, the mass attempts to rebuild its original gravitational field strength. The energy needed to rebuild this field is taken from the surroundings, thus causing the surroundings to drop in temperature. Microwave generation will occur at the same time that the temperature drops because the energy being extracted from the environment causes gravitational pulses which force groups of electrons to oscillate when the frequency of the applied gravitational waves was high enough to ionize the air molecules. If the thermal environment cannot supply enough energy to reconstruct the original gravitational fields of the surrounding matter, then the necessary energy will be taken directly from the atoms. This will cause the atoms to undergo radioactive decay. Both radioactivity and chilling effects have often been observed at UFO landing sights.

We will now summarize some of the basic effects produced by gravitationally driven spacecraft, commonly called UFOs:

1. Contrabators can produce microwaves which tend to raise the temperature of the environment and may also account for burns which have been suffered by some close observers.
2. Cooling effects are produced when the gravitational fields of the surrounding matter attempt to re-establish themselves after they have been diminished by a contrabator.
3. Gravitational pulses cause shock-like ionization in surrounding matter which causes it to emit light.
4. Sonic waves can occasionally be produced by long range gravitational waves which sound like explosions, humming, singing, and squeaking.
5. Strong contrabarc mesofield activity can snatch electrons from an electric circuit causing the same effect as if the circuit was broken.
6. Strong gravitational fields, interacting with the air molecules around a space-ship can produce an aurora-like effect around the UFO. This possibly contributes to the strong light field always observed around UFOs.
7. It is possible that in some manner the Aliens visiting the earth use gravitational waves to produce the solid light effect so often observed.
8. Gravitational waves are better suited for instellar communication because they can be artificially produced and travel faster than the speed of light. Since we cannot as yet detect

and produce gravitational waves, we cannot tune in on UFO communications. Since our scientists have so far detected no space communications, it is reasonable to assume that space beings do not use electronic methods of communication. A more practical method of communication, superior to gravitational waves, is communication through the x_5 and x_6 dimensions. In other words, the space people use mind to **mind communication**. Such communication is not limited by space and time; consequently, such communication can be carried but over the farthest reaches of the cosmos.

9. Gravitational waves have the ability to decrease entropy in R_4 without violating the laws of thermodynamics in R_6 . Thus it is **possible** that **information** carrying gravitational waves can produce paranormal effects very similar to those associated with verified psychics of which there are very few.
10. Contrabators experience no inertial effects because gravitational forces act on all atoms **in** the spacecraft.
11. Strong magnetic effects are produced with the generation of the contrabatic mesofield.
12. True space travel, faster than light, will come into being when man learns how to produce **gravitational fields** from electromagnetic radiation.
13. Spaceships able to jump into R_6 hyperspace will not experience light speed limitations and cosmic matter **resistance**. Thus, it will be possible to travel even to other galactic systems in a relatively short time.

The theory of **Burkhard Heim**, even in its simplest form appears to explain many of the effects associated with **UFOs**. However, it is obvious that much work remains to be done before an actual model of a contrabator can be constructed. Heim is presently attempting to construct such a model but his recent progress in this pursuit is not known.

Here it is important to mention two patents taken out by Henry Wallace in 1972 that were given the numbers 3 626 605 and 3 626 606. (Reference 14) At first it was thought that Wallace was just another crackpot; however, since that time Professor Eric. Laithwaite of Imperial College, London has achieved both fame and notoriety by arriving independently at a theory which says that an anti-gravity field can be generated. The Wallace machine generates a so called "**Kinematic Forcefield**" which is perhaps the same thing as Heim's "**Mesofield**". When this kinematic field is made to vibrate it produces a secondary gravitational field that tends to neutralize **gravity**. From the point of view of Heim's theory the mesofield produced by the fast rotating masses in turn generates a gravitational field that opposes the field of the earth, thus causing the object to appear lighter. The Wallace machine consist of special bodies constructed of very carefully chosen

materials. The masses are then rotated more than 20,000 revs/min. This high speed of rotation causes the spin nuclei of the alloyed metal to polarize which in turn produces the anti-gravitational field,

It is the conviction of the author, however, that this is not the method used by UFOs. Nevertheless, the Wallace machine may give some important hints as to the nature of the mesofield and how it may be generated by electromagnetic means.

Finally, the author has great reservations about the development of the technology necessary to generate gravitational fields. Human history shows that the first application will be to weapons, the likes of which cannot even be imagined at this time. It is now thoroughly proved that the animal in man will never allow him to become a peaceful being ready to live in balance and harmony with nature. The development of gravitational machines will enable man to threaten the domain of space people who have been visiting the earth for thousands of years without interfering with the life evolving on this planet. It is obvious that once man "invades" space, he will immediately interfere because of his materialistic animal nature. It is the conclusion of the author that man will either destroy himself before he is capable of this or he will be directly kept from leaving the earth in this manner by the space beings themselves. Such power in the hands of irresponsible humans is a grave and frightening possibility for man is not yet ready to enter space on the interstellar scale.

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THOMAS E. BEARDEN

A nuclear engineer, war-games analyst, and military tactician, Lieutenant Colonel (Retired) Thomas E. Bearden has over 25 years experience in air defense systems, tactics, and operations; technical intelligence; nuclear weapons employment; computerized wargames; and military systems requirements.

He is currently with the Huntsville, Alabama division of a large aerospace company where he is involved in developing and analyzing countermeasures to antiradiation missiles for the Patriot, Improved Hawk, and Roland U.S. Army missile systems; determining battlefield mission requirements for high energy lasers; and performing computerized air defense war-games and countermeasure studies.

Lieutenant Colonel Bearden obtained an M.S. in nuclear engineering from the Georgia Institute of Technology and a B.S. in mathematics from Northeast Louisiana University. He is also a graduate of the U.S. Army Command and General Staff College and several U.S. Army artillery and missile schools.

He has had direct experience with tube artillery and with the Ajax, Hercules, Hawk and Patriot missile systems and directed the production of technical intelligence on Soviet SAM systems for the U.S. Army/Department of Defense.

Tom holds a Sandan (third degree black belt) in Yoseikan aikido; is a singer, guitarist, and songwriter; member of Mensa, Society for the Investigation of the Unexplained, Vestigia, the American Association for the Advancement of Science, and is on the Board of Governors of the American Association of Meta-Science. In addition, he is Alabama Director for the Association of Distinguished American Scientists and on the Board of Directors of the U.S. Psychotronics Association.

Together with Art Barrett, he also edits Specula, Journal of the





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HYPERSPACE (VIRTUAL STATE) ENGINEERING

THOMAS E. BEARDEN COPYRIGHT 1980

Introduction

This author has formulated a hyperdimensional theory of UFO's which, in a strange fashion, includes every other present theory of UFO's in a nonexclusive manner. The theory is explained in a forthcoming book¹, and it is consistent with the present experimental basis of physics, though extending it.

Mechanisms for materialization and dematerialization of matter (and indeed of thoughtforms also) have been presented, as have mechanisms for most of the phenomena of classical parapsychology as well.

Since the theory enfolds multiple realities, it must include that reality where UFO's -- at least some portion of them -- fit the extraterrestrial hypothesis. If so, then the theory must show mechanisms for faster than light travel -- i.e., it must include hyperspatial aspects and superluminal velocities of real objects. And it does.

While the full treatment of hyperspace is beyond the scope of one short paper, certain aspects can be shown as an overview, sufficient to indicate the direction taken by the theory. We believe, e.g., that the direct connection between nested virtual states and higher dimensional spaces' intersections with the laboratory 3-space has not heretofore been advanced in the literature.

So in this paper some of the hyperspatial aspects -- including superluminal travel -- are sketched out, and a basis for coherent crosstalk between orthogonal 3-spaces (universes) is presented. The theory allows direct amplification of the virtual state into observable state, and direct engineering in and of hyperspace itself. A hyperspace drive is a distinct possibility, and a basic theory for the basic amplifier for such a drive is presented.

In a previous paper² it has been shown that nested levels of virtual state, orthogonally rotated 3-spaces (hyperframes or hyperworlds), and nested modulations in electromagnetic signals represent identical intersections in laboratory 3-space. Real, practical, present-day devices using the theory have also been presented and explained, including the Priore device to cure cancer and leukemia and the neurophone³. Soviet weaponization of these effects has also been reported by the author⁴.

Everett's Theory of the Universal Wave Function

In 1956, working under the renowned John Wheeler at Princeton University, Everett⁵ formulated a totally new interpretation of quantum mechanics and corrected the present interpretation of physics for a severe shortcoming: the limitation to only a single observer/detector at a time. The new theory of the universal wave function that emerged for multiple simultaneous observation was startlingly unique, but totally consistent with the entire experimental basis of physics⁶. The new model, however, represented so unorthodox a change in conceptualization that only a handful of U.S. physicists have examined the theory, and most of the Free World output on the subject is contained in a single Princeton University publication⁷. Nonetheless, the principles of quantum mechanics are nowadays taken to underlie the whole of physics⁸ and physics underlies engineering; thus Everett's fundamental work presages the engineering of novel and practical new systems not presently being pursued in the Free World. But because of its extreme theoretical strangeness -- which, compared to the accepted Bohr interpretation, is as fundamental a change as was Einstein's relativity compared to Newtonian physics -- Everett's work has not been universally accepted even for further investigation⁹.

That investigation might be fruitful can be appreciated by noting that, in the hyperspace that results in Everett's theory, the multitude of 3-spaces all can crosstalk, at least in the virtual state (subquantally). Since conservation of energy can be violated in the virtual state, this means it can be and is surmounted in the time coherent crosstalk between orthogonal 3-spaces. Conservation of energy rigorously applies only to a closed Minkowski 4-space system; energy in 3-space frames orthogonal to the

lab frame (which orthogonal energy will be referred to as *anenergy*) **uncloses** or "opens" the lab frame by the amount of crosstalk translated to and from it. **Further**, in one frame the crosstalk from orthogonal frames occurs in serial order at random from the **orthoframes**. It also normally occurs at so high a frequency (e.g., at wavelengths near the Planck length, or on the order of 10^{-35} meters) and in such short and incoherent bursts that it appears in the virtual state **with** respect to the laboratory observer. **Thus**, this energy is not normally detected, **although** it can be physically demonstrated to be present in enormous densities in vacuum.

On the other hand, if a virtual state coherer can be built, this enormous virtual **crosstalk** energy could produce any amount of **real**, observable energy, and matter could be materialized and **dematerialized** at **will**. Such an amplifier was actually developed by T. Henry Moray in the 1930's, and we **will** shortly show how one may be developed **today**¹⁰.

Virtual States and Hyperspaces

In physics there are two separate kinds of **reality**: (1) Observable **changes**, which can be detected by instruments, and (2) virtual changes, which cannot be detected by **instruments**, even in **theory**¹¹. The difference between these two **realities** depends simply upon the size of the piece of action (energy x time, or momentum x length, etc.) making up an entity or change of which one is speaking. **Usually** the absolute minimum observable change is taken to be $h/4\pi$. Changes smaller than this are "virtual" and not **detectable**, and changes larger than this are "observable" and detectable. Virtual changes are not bound by the conservation of energy **law**, and they almost always **violate** it. Neither are virtual changes bound by the conservation of mass law. Other strange things are also possible in virtual state; e.g., virtual photons can have nonzero mass. We will now show the direct connection between virtual states **and hyperspaces**.

For any instrumental condition in a detector, one may consider a certain momentum and a certain length to be involved in the mass change that **spatially** constitutes the detection. Let us call this critical **length** AL and examine its ramifications (Figure 1) for the finest possible detector - one which detects a single quantum change.

In figure 1 we represent two frames, the **lab** frame S and a moving (**hyperspatially** rotated) frame. We choose a moving object, M, in the moving (rotated) frame, with length as shown. Note that **all** these entities we refer to are to be represented as detected or perceived by our physical detector (**instrumentation** system) in the laboratory frame.

As the velocity of M approaches c , the speed of light in vacuum, M's **hyperspatial** rotation angle α approaches $\pi/2$. However, prior to the velocity of M actually reaching c -- and prior to a reaching $\pi/2$ -- the dimensional length projection (intersection) of object M in frame S will contract to reach AL and fall below it. The **length** of M becomes virtual with respect to the detector and hence **undetectable**. Since **geometrically** an absence of **length** in a continuous frame S would correspond to an α rotation angle of $\pi/2$ in quantized frame S, we consider that angle a "jumps" or "tunnels" to $\pi/2$ just immediately past the critical angle α_c , which is defined as the angle of rotation at which $L \cos \alpha = AL$. Rotation just **past** the critical angle corresponds to a **Lorentz-Fitzgerald** contraction into the **virtual** state below the quantum **threshold** of the **detector's** observable universe. To an S **observer/detector**, object M at that point has lost its length in the direction of motion, becoming a wave front moving at the **velocity** of light and thus **photonic** (comprised of photons). To a quantum observer in S, mass turns into photons just short of a full $\pi/2$ **orthorotation**, which means the process can happen with a finite amount of energy. This "jump" effect is not taken into account in the continuum Lorentz transformations of special relativity at present, and this may be the missing link which has prevented a successful union of relativity and quantum mechanics. In other words, the final part of the orthorotation (acceleration to the speed of light) occurs in the virtual state; **specifically**, that part of the rotation lying between $\pi/2$ and α_c .

Further, in an infinite dimensional space (assumed), we may now proceed to rotate object M on past $\pi/2$ with respect to S, which constitutes rotation from zero in frame S'. Just prior to reaching an S angle of π (i.e., an S' angle of $\pi/2$), in frame S' another disappearance below a virtual length threshold $\Delta L'$ will occur in corresponding fashion. Note that this second **threshold** $\Delta L'$ also has an exceedingly small but finite projection

into frame S, in the virtual state portion lying inside AL. This second "relativistic quantum jump" in frame S' therefore constitutes a sort of "second-level, nested subquantum threshold" in frame S, in the virtual state.

Continued rotation into hyperspace passes through successively finer, nested virtual sublevels or subthresholds in S by successive breaching of deeper subthresholds due to continued Lorentz-Fitzgerald contraction. Higher hyperspatial frames thus constitute nested sublevels in virtual state with respect to the laboratory observer. To him, hyperspaces and virtual sublevels are identically the same things.

We now note that "time" may be considered a sort of box containing all observables and virtuals. (In quantum mechanics, time is not an observable; it is simply a parameter.) Observationally, "time" is nothing (does not exist); therefore by the fourth law of logic¹² it can be said to be and/or contain everything, the total mishmash of observables, virtuals, mental objects, etc. Everything - mental, physical, virtual, observable - may simply be taken as the various "parts" of the structure of time¹³.

Since there is no such thing (separable) as "time," then we take the thesis that all modeling of space, mind, thing, and nothing must be or can be done spatially if it is to be completely observationally correlatable. Relativity, on the other hand, presently attempts to use time as an existent dimension of the variety such as length; it thus allows rotation of the S-frame only in the direction of the time axis in Minkowski 4-space. Indeed, the very concept of a "frame" is totally incompatible with the accepted monocular (single observation at a time) interpretation of relativity. A "frame" a priori assumes that every possible spatial measurement has already been simultaneously made, so that all relationships are already established. Examinations in the frame thus must "correspond" to it; i.e., one can only uncover relationships from those already established. Experiments which do not so "correspond" lead to "nonlinearities" - such things as violations of the Heisenberg uncertainty principle¹³, "curved spacetimes," etc. Further, we remark that, when one speaks or thinks of an object - including a spacetime frame - in a perceptual or observational manner, he himself is "outside" the object perceptually envisioned, and this implies the addition of at least one additional "dimension" a priori. Thus to simply conceive of a 4-space implies the conceiver in 5-space; conceiving that implies a 6-space, and so on. This drives us to an infinitely dimensional spacetime, where in each instance what we call "time" merely refers to the persistence in the observer's consciousness of the n-space perceived/conceived. Ultimately that is all that time is - the persistence in consciousness of a (separated) perception.

Spatial modeling thus requires an infinite dimensional space and an infinite number of orthogonal angles. It also contains an infinite number of orthogonal universes. The "time" axis that one draws in such a hyperspatial model has no meaning except with respect to a relationship existing between two or more hyperspace frames or objects. Specifically, the time axis represents the totality of all the hyperspaces and their objects, hence .

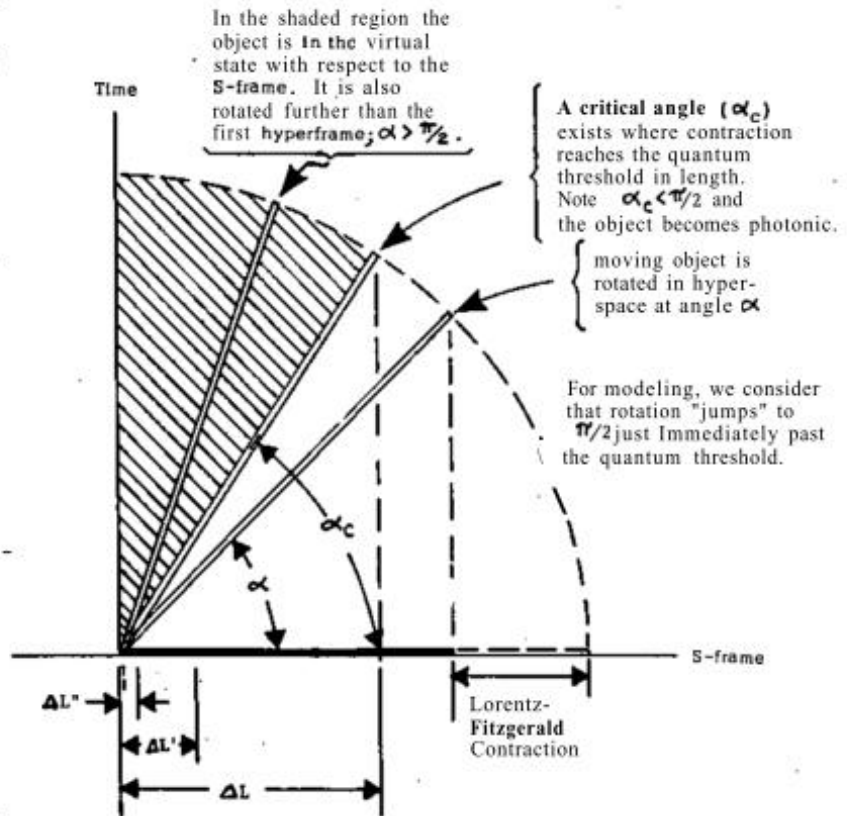


Figure 1. Hyperspaces, nested virtual states, and rotated frames.

includes all the objects and their relationships which can be separated from the hyperspace collection. Indeed, the "time" axis represents the observer (**omnipotently**), and physics is reduced to the relationships between perceptions (separations) -- exactly in accord with **the** general interpretation of quantum mechanics¹⁴.

The Hyperspace Model

A simplified model of one kind of **infinite-dimensional** hyperspace in which calculations are particularly direct is shown in Figure 2. This nested virtual-state anenergy model is consistent **with** the experimental basis of physics. Note, however, that the model offers a mechanism by means of which electromagnetic energy in the **laboratory** frame can be **nonradiatively** created and destroyed, matter can be materialized and **dematerialized**, hyperspace travel can be **accomplished**, and **faster-than-light** velocities are a reality. The model also gives physical substance to the present creation and annihilation operators used in quantum mechanics.

In the **model**, the time axis is shared **simultaneously** by an infinite set of orthogonal 3-spaces. An **object's** intersection in a specific 3-space determines how it is detected or observed by an instrument or observer in that frame. Accordingly, in this **model** an "object" has more than one kind of "reality" it evidences; spatially a 3-dimensional physical object in the **S** frame is a 2-dimensional wave or photon in the **S'** frame, a 1-dimensional line (bare neutrino)¹⁵ in the **S''** frame, and a 0-dimensional point (thought!) in **S'''** and higher **hyperframes**. Vice versa, spatially a 3-dimensional object in a higher frame is a quite different object to an **S**-frame observer. An electron serves as a good example: when in the **S'** frame, it is seen in the

S frame as a **photon**; when in the **S''** frame it is seen by the **S**-frame observer as a bare neutrino or **flux line**; when in the **S'''** frame, it is simply a point or **thoughtform** in the **S** frame.¹⁶ The major point is that, by sufficient time-coherent collection of the virtual-state "points" or "thoughtforms" or "thought energies" or anenergies in the **S**-frame, one can produce neutrinos, virtual photons, photons, or even mass particles. Such a collection process is referred to as "**kindling**," and this process may be regarded as simply the "**lifting**" of the **created** **S**-frame entity from the higher **hyperframes** which simply constitute the lower level nested virtual states to the **S**-frame observer. Several fundamental experiments and concepts in physics are **already** merely specialized cases; lifting a real electron from the **Dirac** sea of negative energy electrons is one example in solid state physics, while **the most** universal examples are simply photon absorption and emission whereby, to the **S**-frame observer, 2-dimensional wave energy and 3-dimensional corpuscular mass may be turned one into the other. Further, any fundamental mass particle is actually a dynamic hyperspatial entity and not just a static corpuscle; a fraction of its time the **S**-frame particle spends in higher dimensional spaces. As is well known, e.g., a free electron is a wave for a fraction of time given by the fine structure constant

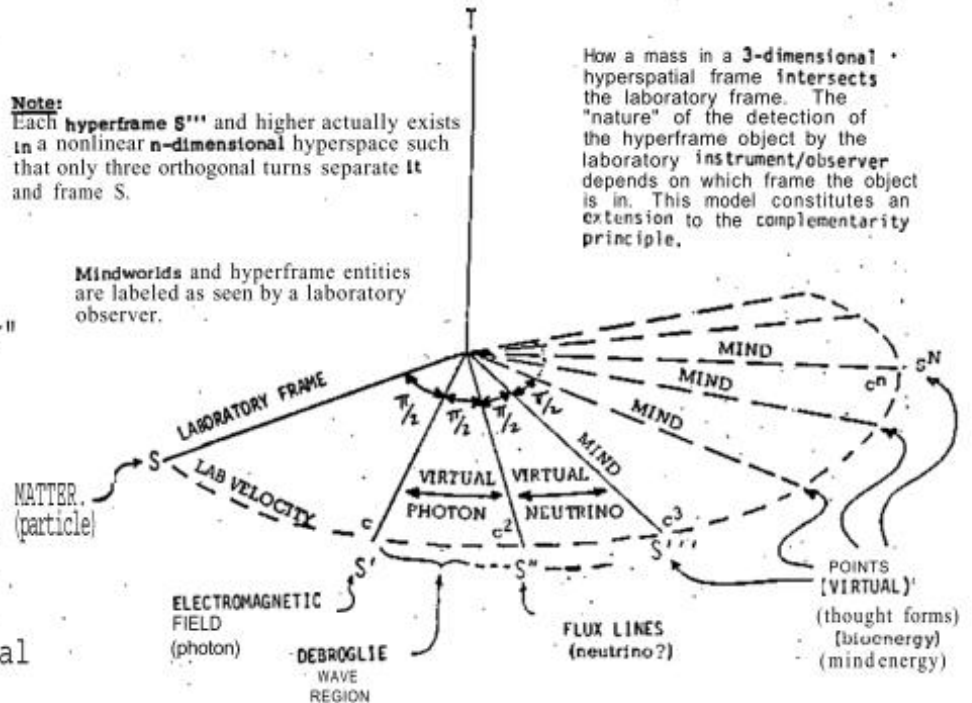


Figure 2. Hyperframes and orthogonal worlds.

Thus **materialization and dematerialization** (creation and annihilation) of particles by **conventional** modes may be modeled in the **hyperspace** model shown in figure 2. In **addition**, new modes are opened up whereby instead of photons being produced, a **dematerializing** particle may radiate neutrinos or bare neutrinos, or **simply** dimensional points -- in sharp contrast to conventional modes such as pair **annihilation**, in which photon radiation accompanies the process. Indeed, **UFO's** often demonstrate exactly such **orthorotational** phenomena; a **classic** case is shown below in the photo in figure 3.

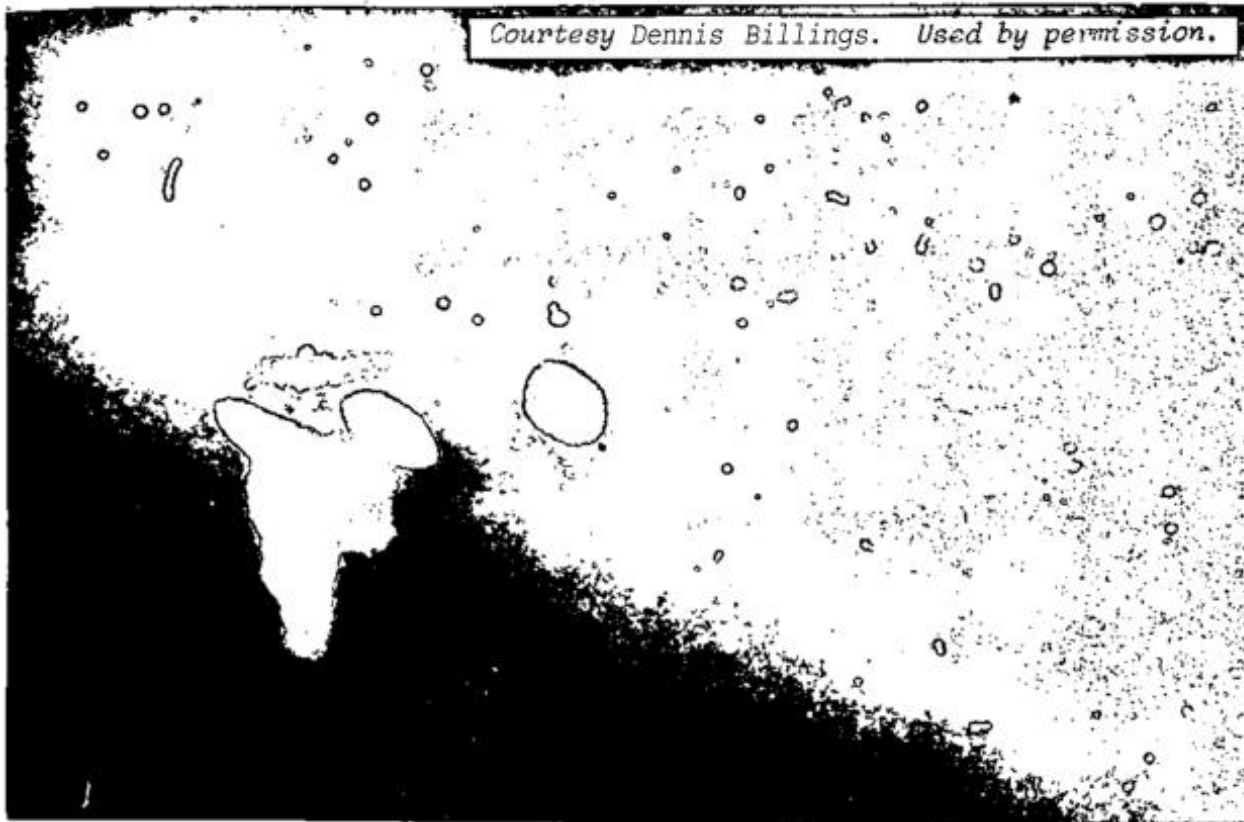
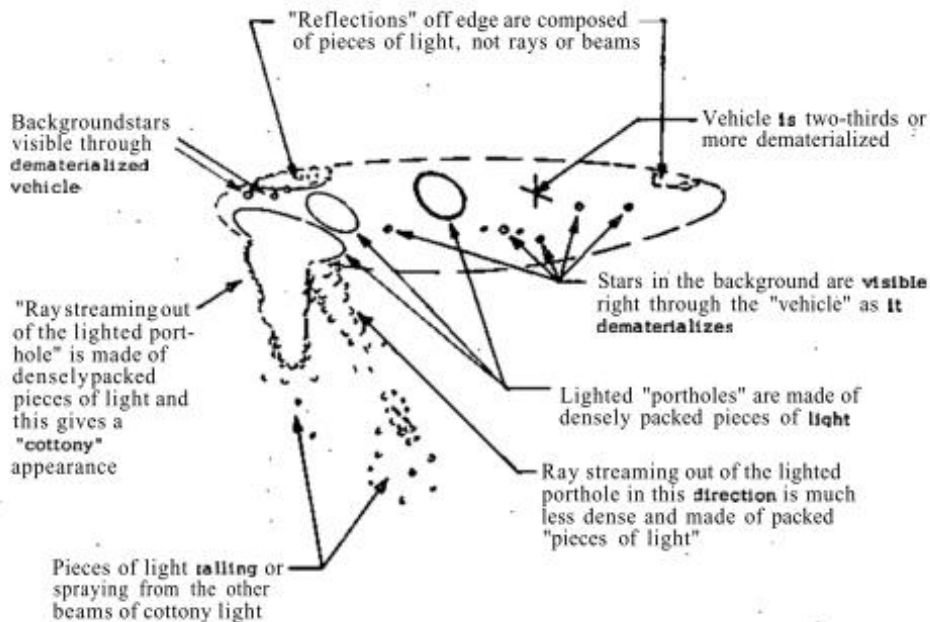


Figure 3. 1970 Dennis Billings Photo, Decatur, Alabama



In the figure, a classic **discoidal** UFO which had been fairly well materialized was photographed in about two-thirds **dematerialized** state. Major details of the photo and craft are given in the explanatory line drawing **below** the **figure**.¹⁷

The Unusual Nature of Photons and Electromagnetic Waves

While it is not possible to go into detail regarding the conclusions of this section because of limited space, a summary of some of the more important results obtained by the **author**, on this subject is given. First, in figure 4 we show the relation between a "photon" and an electromagnetic wave; to my knowledge this has not heretofore been presented in the **literature**. Briefly, a "particle" of mass is **spatial**; therefore time must have been destroyed from **L³T spacetime** whenever one refers to a "particle." A wave, on the other hand, must still exist in time to exist at all; the idea of a wave thus a priori implies the continuance of time. Since **all** that can be detected is a spatial change, it **follows** that detection/measurement constitutes

$$\partial/\partial T \quad (L^3T) \rightarrow L^3 \quad (2)$$

where the mysterious "collapse of the wave function" occurs as a result of the loss of time from a **localized** region of **L³T spacetime**, yielding a spatial time since the previous such loss of time. In other words, a "photon" results when an electromagnetic wave **oscillation** is stopped by extracting its time component. Since one half the wave exists in positive time and the second half exists in negative time, it is necessary to extract both **halves** of a cycle -- thus a "photon" may be regarded as one single cycle of an electromagnetic wave. Further, each of the three vectors of an EM wave can be considered as

being comprised of nested tangles of **virtual/hyperspatial** subvectors. The EM wave, then, is the **carrier** of both time and the virtual state **entities**. (It carries mindstuff and thoughts as **well**, for in their own hyperframes, these are as substantial as **physical** objects are in the laboratory frame.) This in turn has led to the "raindrop model" of quantum change **itself**, proposed by the **author**¹⁸. The raindrop model of quantum change is shown in figure 5. If the reader is uneasy about the **fundamental** change of reality invoked by the photon interaction, let it be noted that the **two-slit experiment**, so vital to quantum **physics**¹⁹, shows clearly (when done with electrons, e.g.) that the electron has a completely

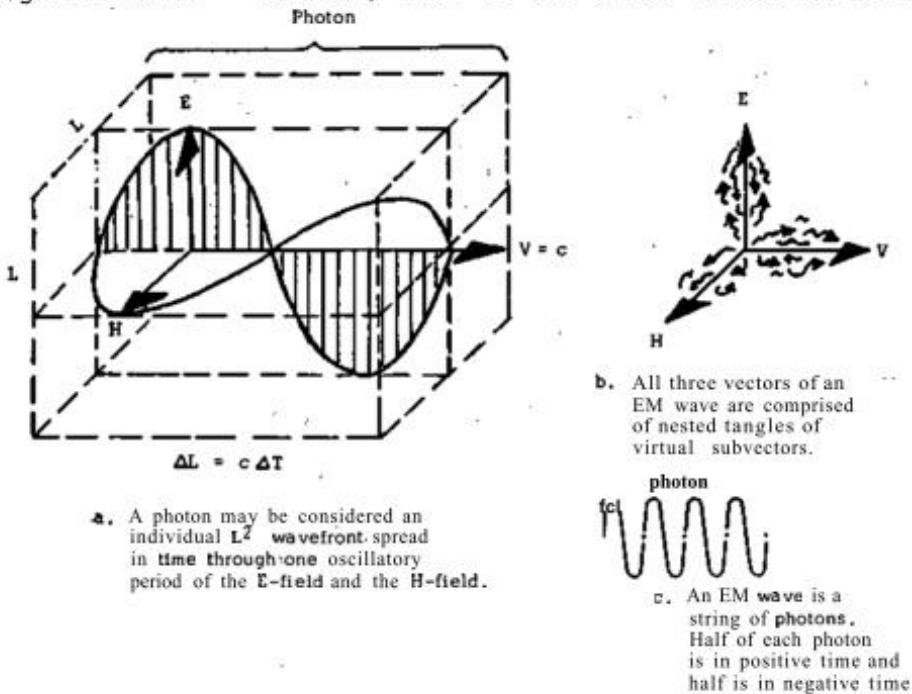


Figure 4. Nature of the electromagnetic wave.

different sort of nature until it has been struck by a photon. Before being struck by a photon, indeed the electron is **4-dimensional** (i.e., **immediately** after its liberation from the source). It is simply a separated piece of spacetime (**L³T**). Since multiple slits occupy the same time (exist at the same time), the electron can interact with multiple **slits**, so long as it itself still retains its own time extension. When hit by a photon, however, the photon carries away the **electron's** "time-tail" when it is **reradiated**. This converts the **electron** to a mass particle, much like a **little** billiard ball. In this case the electron can only pass through (interact with) a single slit, since it must

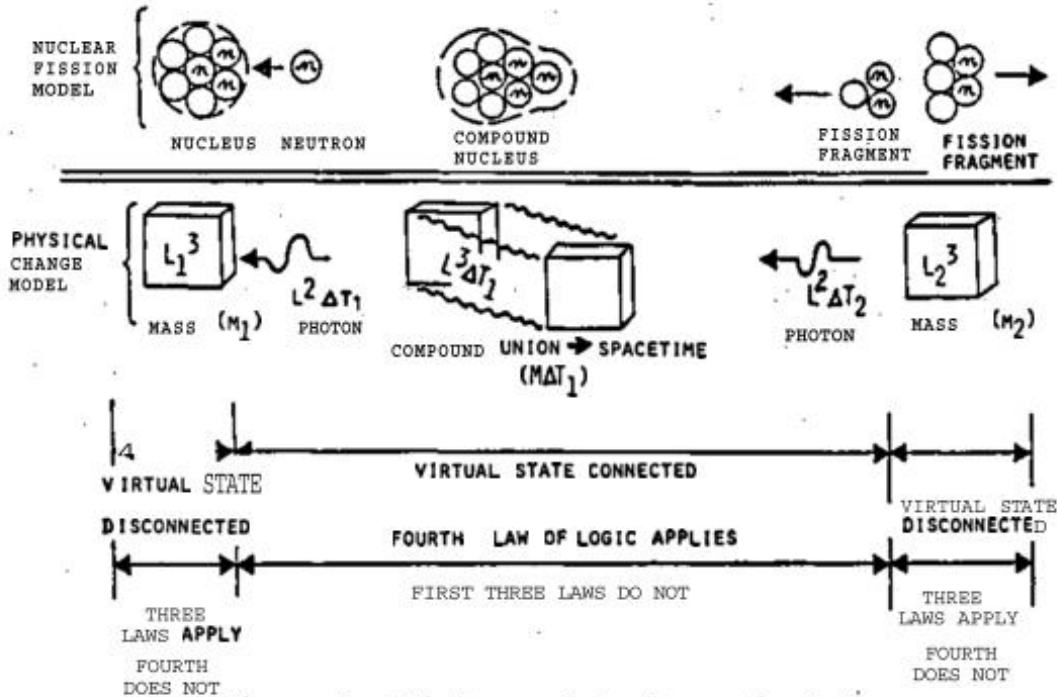
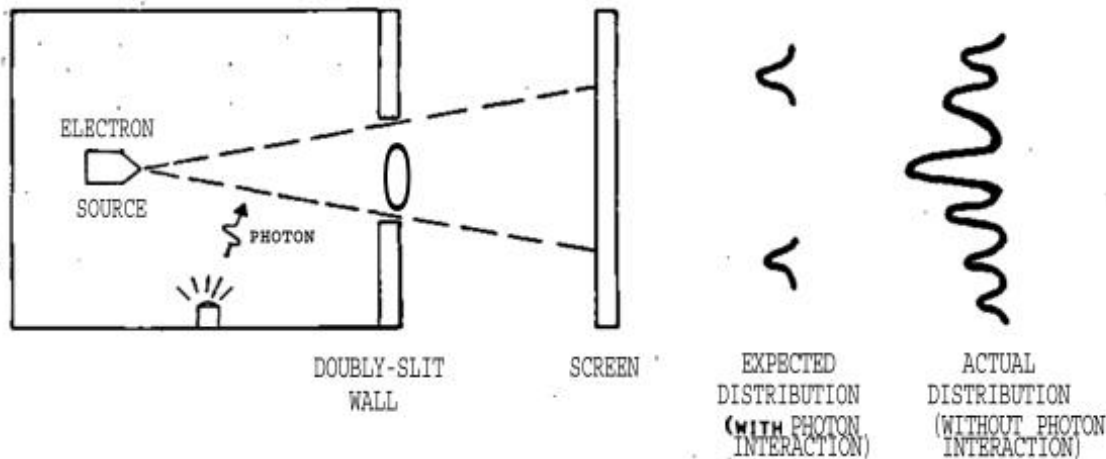


Figure 5. Raindrop model of quantized change.

now spatially coincide with the slit. The two slit experiment is diagrammed in Figure 6, and it **establishes** the raindrop model of quantized change. In addition, it shows that (1) mass a priori is spatial; hence it does not occupy time (only mass x time occupies time!); (2) photons carry time (Young's two-slit experiment done with photons reveals the wave interference phenomenon); (3) photon interaction with a newly created particle (i.e., with an electron) extracts the particle's "time-tail", since the particle acts in classical (spatial) fashion after photon interaction; (4) a particle when first born from spacetime is actually made of mass x time, since such a particle exhibits wave interference if not interacted with by a photon.



NOTE: IF THE ELECTRON IS HIT BY A PHOTON BEFORE IT REACHES THE TWO-SLIT REGION, IT DOES NOT EXHIBIT THE WAVE INTERFERENCE EFFECT, BUT INSTEAD ACTS AS A CLASSICAL OBJECT AND GOES THROUGH ONLY ONE SLIT, YIELDING THE "EXPECTED DISTRIBUTION" PATTERN.

Figure 6. Two-slit experiment (with electrons).

Kindling

Since the electromagnetic wave is the carrier of **virtual/hyperspatial** structures, objects, and patterns, it provides a means of coherent collection and delivery of **virtual state/hyperspatial** patterns to a given object or region. When an electromagnetic signal is being continually absorbed by a radiated body and each photon absorbed contains an identical virtual pattern in and among its collection of transported incoherent virtual state patterns (which more or **less** randomly vary from photon to **photon**), then an accumulation of the repeated coherent virtual pattern occurs by superposition as shown in Figure 7. The superposing pattern (actually accumulating in **exponential** fashion) will diffuse throughout the absorbing **mass**, growing toward the observable quantum threshold. When this exponential growth reaches the quantum threshold, real observable change then occurs in the absorbing object mass. This process is called *kindling*, and it is a fundamental process whereby a **virtual** state pattern may be modulated into an electromagnetic carrier (including, e.g., the **electromagnetic** interchanges of an object that constitute its **temperature**), delivered to a target mass, and superposed into observable change in that mass. The type of **observable** change which can be kindled would appear to be almost unlimited, being dependent **only** on the type of virtual pattern modulated into the carrier photons. As shown in figure 7, kindling works **precisely** as does the time-synchronous type of moving target indicator in a radar, with the exception that the **superposition is exponential** rather than algebraic.

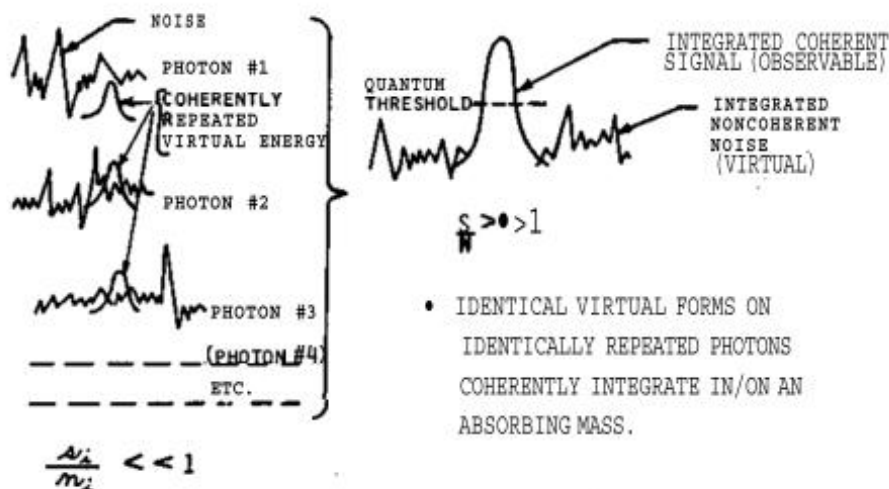


Figure 7. Kindling virtual state into observable state.

Hyperspatial Aspects of Modulation

We have previously argued that modulation of an **electromagnetic** wave actually does constitute bending or twisting the individual photon, including the space it is in. Thus modulation of a photon adds a spatial derivative to it -- a higher spatial derivative, and thus a hyperspace component. Modulating the first modulation in turn adds yet a higher **hyperspatial** component, etc. And these **hyperspatial** components also represent nested levels of virtual state patterns being added to the wave. This leads to the Situation graphically **illustrated** in figure 8. *That is, hyperspatial engineering, virtual state engineering, curving space, kinking a photon, engineering neutrinos and mind/life/consciousness directly, engineering thoughtforms, and nesting orders of modulations on electromagnetic carriers are all the same thing!*²⁰ (Indeed, one may now get a glimpse of how Jacques Vallee's "conspirators" are moving to accomplish some of their acts of conspiracy). •

THE EUREKA CONCEPT

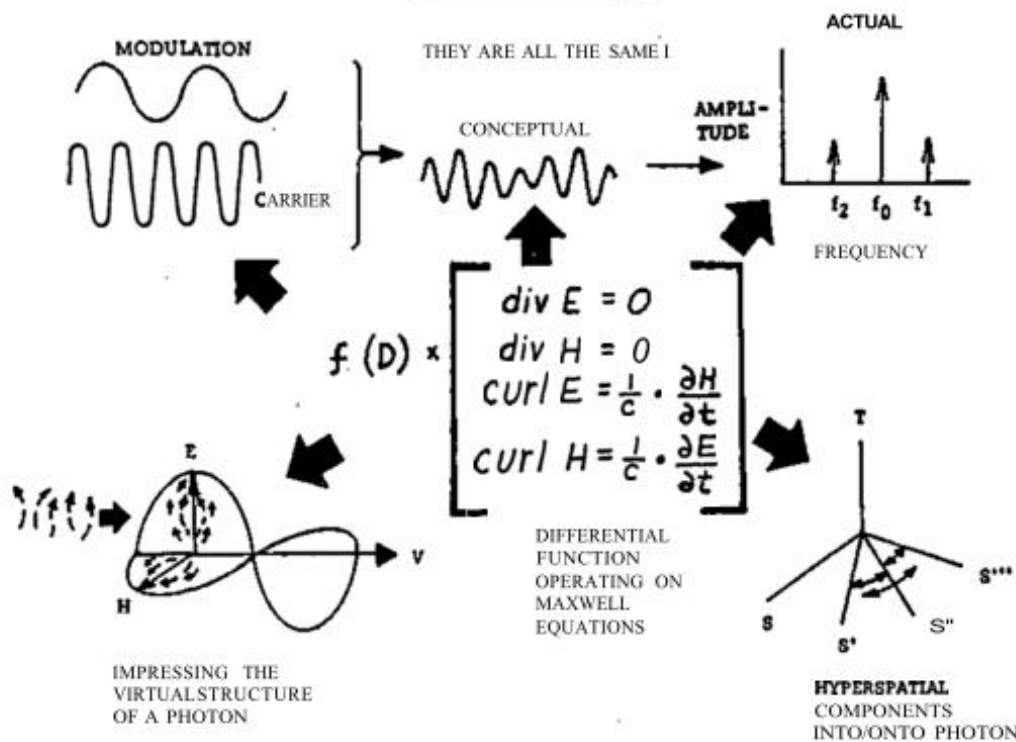


Figure 8. Bent photons, hyperspaces, virtual states, and modulations.

Also note that the **kindling** phenomenon primarily affects detectors that use magnetic field (such as a compass) or electric field (e.g., a geiger tube, which is a powerful **cascade-discharge** type detector of ionization - of the increased collection of virtual photon activity in a charged region). Many of the phenomena of UFO incidents involve such **detections** -- compass **needles** deflecting, geiger counters reading, etc. Kindling also **exponentially** increases for a linear increase in **voltage** - thus high voltage ignition systems and communications systems often are affected **strongly**, while the extremely low voltage human nervous system is only slightly or **moderately** affected. (The automobile ignition, e.g., fails because the **electrons** flowing in the high tension circuits are extinguished by the **kindling** of reversed **virtual** photon patterns onto the individual electrons in the circuit. This converts the electrons into classical neutrinos, which pass harmlessly away through matter with no effect. When the **kindling** ceases, electrons immediately resume flowing, since the circuitry is undamaged physically.)

Antigravity Effects

Antigravity effects can be obtained from the model in two fashions: (1) by the production of excess negative time between two masses, the two masses **repel**. (The attraction of gravity, looked at in negative time, is the repulsion of masses). (2) The second method is by means of electro-gravities. **I.e.**, electrical field and gravitational field are not mutually exclusive, as is the presently accepted assumption of **physics**. Indeed, in 1974 Santilli²¹ proved that gravitational field and electrical **field** are not mutually **exclusive** things. What is then left is either a strong assumption or a weak assumption: The strong assumption is that **electrical** field and gravitational field are totally **one-and-the-same** thing, and the weak assumption is that electrical field and

gravitational field are partially the same thing. In our model the electrical field represents a compression of the gravitational field by the factor 10^{42} or so, and if one **could** liberate only a small portion of the **antigravity** contained inside a flashlight battery, one could levitate entire cities. The basic amplifier theory we propose should conceivably be able to **accomplish** this.

Also, one must recognize that the force of **gravity results** in a change to velocity -- i.e., in the acceleration of a mass. The second hyperspace, S'' , represents an acceleration in the S frame since it represents a change to velocity. Thus strong kindling of second **hyperspatial** components in a mass should result in the **levitation** of that mass, if the **kindling** is 180° out of phase with the acceleration force of **normal** gravity. The anomalous effects of highly charged objects with respect to gravity are **well-known**²², and strong application of kindling into these known anomalies should directly yield practical antigravity drives and devices.

Tapping Zero-Point Energy of Vacuum

Enormous amounts of energy might be needed on a **vehicle** equipped with a hyperspace drive and prepared for hyperspatial travel at (to the lab frame) **superluminal** velocities. Indeed, incredible amounts of incoherent, **virtual-state** energy are contained in empty vacuum itself -- if condensed into coherent matter, e.g., one cubic centimeter of empty vacuum might yield up to 10^{100} or more grams. If even a slight degree of this enormous energy can be cohered and tapped, sufficient energy for any purpose could result. The energy can be and has been tapped -- even the hydrogen atom can do it, as **evidenced** by the Lamb shift. However, T. Henry Moray successfully tapped zero-point energy of vacuum in the **1920's** and **1930's**, and in 1939 had obtained 50 kilowatts of power from a 55-pound box, right out of "thin air." **Figure 9** shows Moray in his laboratory with the device. Further, the device had 29 or so stages, and **behind** each stage an **additional** 50 kilowatts of power could be tapped **off**. The **device** ran absolutely cold, which established that it was not **processing** energy *through* its **circuitry**, but rather was cohering and collecting

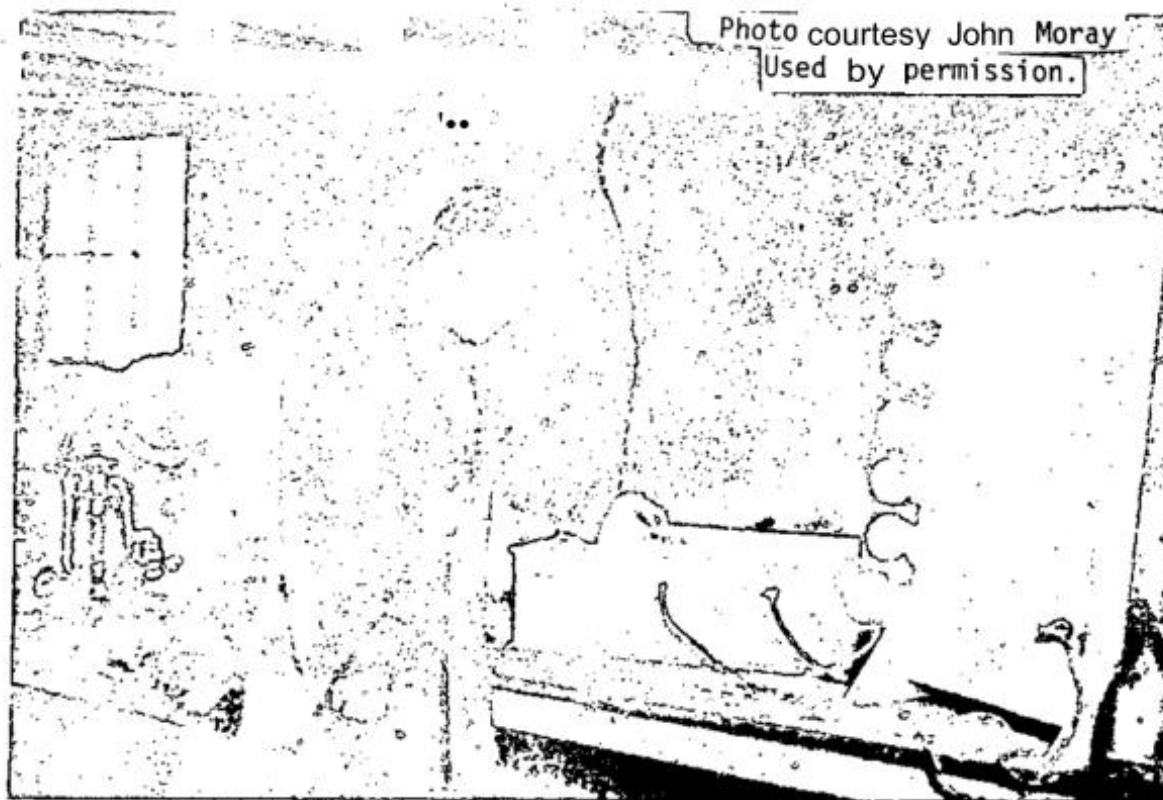


Figure 9. T. Henry Moray with his radiant energy device.

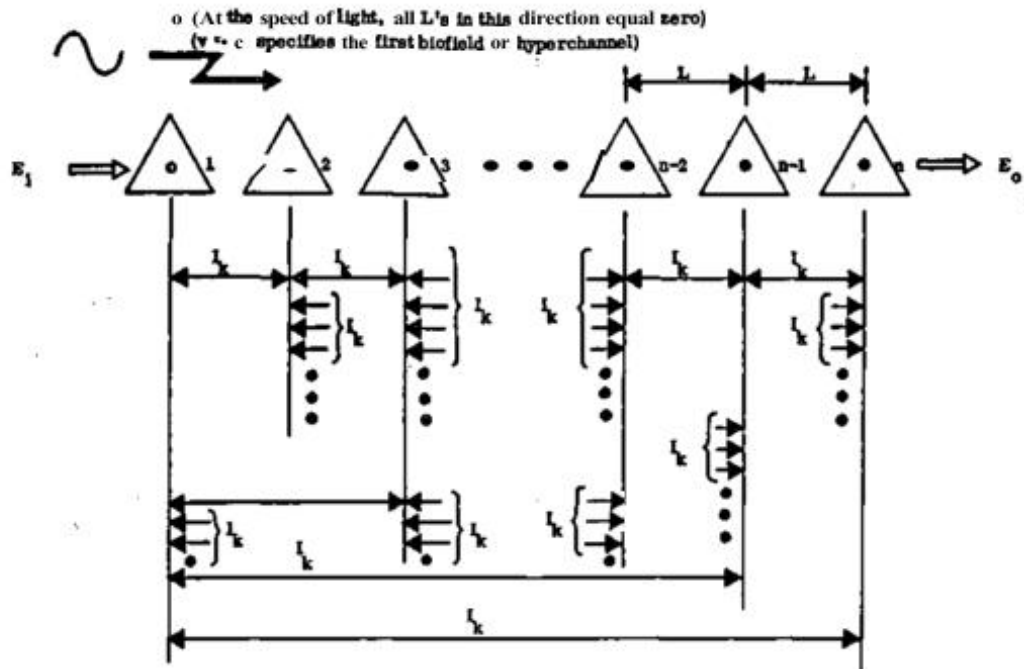
energy into its stages from outside **laboratory 3-space**. In other words, the Moray radiant energy device appears to have been the first successful hyperspatial amplifier.

And in answer to any objection **that** zero-point energy can be cohered, we point out that in 1977, **Prigogine** was awarded the Nobel Prize for correcting and expanding the second law of **thermodynamics** to show how certain systems may evolve from randomness toward **order**.²³ This is a **fundamental** change to the entire statistical basis of physics; **specifically**, for highly nonlinear systems far from equilibrium, the former law of entropy need not apply. If such a nonlinear system is allowed to vary in an **absolutely** random fashion, large scale order will start to emerge and stabilize. The more degrees of freedom **allowed** in the variation, the more stable these emerging orders become. (Thus the **cross-talk** among the infinite number of degrees of freedom provided by the **hyperspace** model in figure 2 should yield very stable ordered forms -- which we call stable masses in the laboratory frame). Thus it is now known that from utter chaos there can and will arise large-scale order. Highly nonlinear systems now are known to follow a **different** kind of entropy law, and often to exhibit negative entropy. Significantly, Moray built a sort of "Prigogine **transister**" by grinding up germanium and other materials, pressing it under high pressure and temperature, and sintering it into a pellet which provided the **real** secret of his **collector/detector**. He **also** included a radioactive material -- probably a beta emitter -- whose energy unbalance in the nucleus represented a **hyperspatial** kindling component connected to the nucleus. The exponential sharing of kindling among the various radioactive **atoms** leads to the exponential law of radioactive decay; more **importantly** for Moray, it lead to a direct connection into **hyperspatial/virtual state** energy.

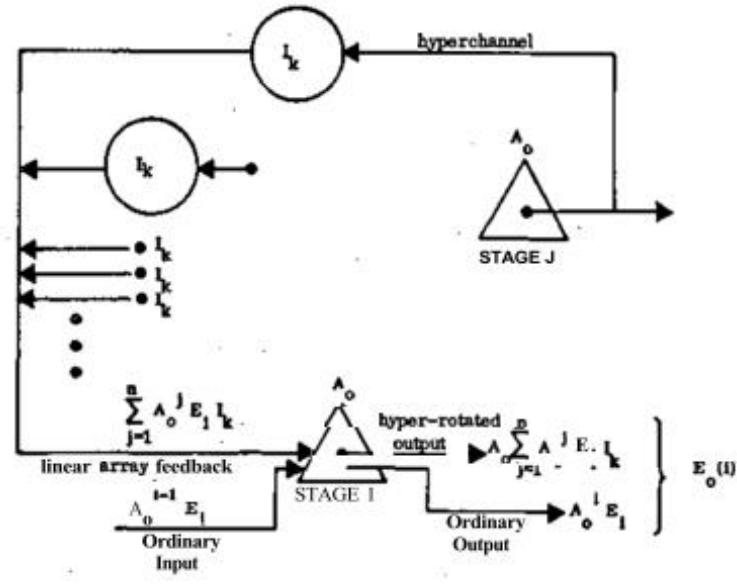
Here we make a very strange but subtle point: randomness can be *synchronized to* randomness, *according to the Prigogine effect*. We very simply demonstrate this by a **gedankenexperiment**: Suppose you have a series of numbers produced by a random number generator. Now write down the series again. Is the second series random? If you argue it is not, then neither was the first series. If you argue it **is**, then how do you explain the presence of two **exactly** synchronized, one-to-one correspondent random series? If one admits that randomness can cohere to randomness, there is no problem. Incidentally, the entire basis of physics depends upon this effect -- for the probabilities **included** in the wave function propagate **absolutely deterministically** until a detection (observation) is made, yet quantum occurrences are statistical. We leave the point without further discussion, but leave the remark that, to synchronize and collect energy from randomness, one must use a process or device which uses such randomness within each particle. This means something like an **ionization** detector such as a **geiger muller** tube, where each electron in the **discharge** has a randomness pattern of **virtual** photon activity associated with it; or a **randomly-oriented-grained** semiconductor material such as germanium, doped with a random-function **hyperspatially** connected material such as radioactive **nuclei**. We will now develop a theory for the major contribution (first hyperspace contribution) of an **amplifier** using such a detector for each of its stages, and **deliberately** designed to kindle hyperspatial/virtual energy.

Theory of the Hyperspatial Amplifier

Calculation of the first hyperchannel effect in a **multistaged amplifier** can be established as shown in figure 10. The schema may be visualized as similar to a Class F amplifier using state-of-the-art feedforward and feedback techniques. In the **first hyperframe** given by $v = c$, all stages of the amplifier appear superposed due to Lorentz-Fitzgerald contraction. For a particle at a particular location in any stage n the corresponding location in any other stage m will have an exceedingly small but finite probability of having the same energy state, **i.e.**, there is a small but finite and **real** possibility that the particle exists in both locations **simultaneously during** a given small increment of time. In the lab frame, that **probability** may be taken to be an identity coefficient **between** the two locations and regarded as the probability of a **wormhole** connection in **spacetime** itself -- **i.e.**, as the fraction of time that **spacetime**



HYPERCHANNEL EFFECT



OUTPUT OF STAGE II

Figure 10. Calculating the hyperchannel effect.

is multiply connected between those two lab frame locations, through the first hyperframe. It may also be regarded as the fraction of time that a particle spends in both locations at once -- i.e., as two particles at once, existing simultaneously in the two lab frame²⁴ locations. Figure 10 shows the setup of the calculation of the gain available by cohering the collection of the hyperspatial component. For stage i of n stages, where E_i = initial input to stage i,

$$E_{o(i)} = A_0^i E_i + A_0 \sum_{j=1}^n A_0^j E_i I_k \quad (3)$$

or

$$E_{o(i)} = A_0^i E_i + A_0 E_i I_k (A_0 + A_0^2 + \dots + A_0^n) \quad (4)$$

For stage n:

$$E_o = E_{o(n)} = A_0^n E_i + A_0 E_i I_k \left[\frac{1 - A_0^{n+1}}{1 - A_0} \right] \quad (5)$$

$$E_o = A_0^n E_i + A_0 E_i I_k \left[\frac{A_0^{n+1} - 1}{A_0 - 1} \right] \quad (6)$$

For $n \gg 1, A_0 \gg 1$

$$E_o \sim A_0^n E_i + A_0 E_i I_k \left[\frac{A_0^{n+1}}{A_0} \right] \quad (7)$$

$$\frac{E_o}{E_i} = A_0^n + A_0^{n+1} I_k \quad (8)$$

where A_0^n represents the gain factor in the ordinary 3-space channel by standard theory of inert amplifiers, and $A_0^{n+1} I_k$ represents the exponential hyperchannel gain factor of the linear array. In general, it is readily seen that the total gain factor, considering all higher hyperchannels, will be of the form:

$$\frac{E_o}{E_i} = A_0^n + A_0^{n+1} I_k + A_0^{n+2} I_k^2 + \dots + A_0^{n+r-1} I_k^{r-1} + \dots \quad (9)$$

Further, due to the minute size of I_k (e.g., $\leq 10^{-\epsilon n}$), for normal A_0 gains the hyperchannel effect will be completely negligible unless a very large number of stages are used.

Because of the rapid **exponential falloff** of the input **amplitude** from **hyperchannels** above the first, all **hyperchannels** two **orthogonalities** and further away from the laboratory frame may normally be neglected unless an extreme number of stages are used (and unless one wishes to materialize thought forms or **dematerialize matter!**). But 20 - 100 stages can be sufficient to produce the effect in the first **hyperchannel**, as can be seen from equation (8). Since the first hyperchannel is electromagnetic field with respect to an **S-frame** observer, then useful electromagnetic energy in the **S-frame** is produced by the amplifier, given the appropriate number of stages (not too many and not too **few**). Further, because of the exponential function of n that results in the gain factor, the addition of only a few extra stages past the level **required** for breaching the quantum threshold has the potential of yielding enormous amounts of energy, subject only to **practical** materials limitations and failures. Further, by coupling the cohered energy to electron emission from a cold cathode material, the amplifier should produce a direct flow of electrons into external loads, rather than emitting electromagnetic radiation. Many other utilizations of the basic hyperchannel amplifier effect are possible, but cannot be covered due to space limitations of this paper. But with a large number of stages, materialization and **dematerialization** of matter would appear possible. Further, by using three or more of the amplifiers synchronized into a **3-dimensional interferometer**, direct **teleportation** becomes **technically** possible -- the term "**teleportation**" merely implying the rotation into **S''** or higher at an initial S-frame point, and rotation back into the S-frame at a distant point -- anywhere in the S-frame universe whatsoever -- with no S-frame travel in between. The immediate **application** to **hyperspace** drives is apparent.

Summary and Conclusion

By abstracting the fact that "velocity" is simply rotation of an object outside **the** laboratory frame and placing no preconceived 3-space notions on the **abstraction** to limit the number of orthogonal rotations which can be made, a **hyperspatial model** containing an infinite number of orthogonal 3-spaces results. In this **model**, nested levels of virtual state become identically the same thing as higher **hyperspaces**. Insisting that the quantum mechanics **condition** of the **nonobservability** of time be obeyed, a completely spatial model results in which "time" is merely a certain sort of overall scalar field in the hyperspace. From the **model**, materialization and **dematerialization** of matter can be expressed, as can hyperspatial **interferometry** methods of **intergalactic** "jumps" through hyperspace.

Using the basic **model**, the theory of a **hyperspatial** amplifier can be constructed, suggesting the direct development of practical devices utilizing the theory. One such device appears to have been built in the 1920's and 1930's by T. Henry Moray.

The relationship of the theory to nested levels of modulations on ordinary electromagnetic signals has previously been pointed out by the author, and several devices explained which apply the theory in that fashion.

It cannot be stressed too strongly that the virtual state and hyperspatial frames are one and the same thing. Further, in quantum physics we have known for many years that virtual exchanges account for the generation of almost all **observable** forces between real objects. The notion that the virtual state itself can be directly engineered -- thus also yielding the direct engineering of hyperspace -- does not appear to have been recognized in the **literature** to date. But for some time the present author has been convinced that virtual **state/hyperspatial** effects (even engineering) are strongly evidenced in the UFO phenomena, and that the majority of the phenomena -- that 83% or so which consists only of nocturnal lights -- can never be explained at all unless the relationship between orthogonal 3-spaces in an **infinite-dimensional** hyperspace or universe is taken into account.

Even if the formerly prevailing UFO hypothesis -- that UFO's represent extra-terrestrial visitations -- is narrowly adhered to, practical intergalactic travel is not possible unless **superluminal velocities** can be achieved practically. **DeBroglie waves** already travel at such velocities, and the common scalar **potential** in normal electromagnetic theory does **likewise**. The **model** presented in this paper offers a **practical**, developable methodology by means of which the power and hyperspatial drive of an intergalactic spaceship might be achieved.

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11. I.e., an individual virtual change cannot be detected, even in theory. However, coherent collection of virtual changes can be detected. E.g., the charge of an electron is due to its emission and absorption of virtual photons. Electron "collision" is simply the exchange of virtual photons between the two "colliding" electrons; large numbers of exchanged virtual photons create a macroscopic force between the two meeting electrons. Indeed, in particle physics, exchange of virtual particles is assumed to account for almost every force in the macroscopic world. Instruments can thus be built to detect coherent groupings of virtual changes. The coherence need not be complete, but only sufficient to breach the quantum threshold. The simplest example of an instrument which can be made to detect in such a fashion is a geiger tube. Lower level virtual energy (higher hyperspatial anenergy) collects and kindles into E field or B field, slightly changing the collecting field. Sufficient collection/kindling of the virtual changes leads to observable change.
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13. **Antonio F. Ranada and Luis Vazquez**, "Kinks and the **Heisenberg** Uncertainty Principle," *Physical Review D*, Vol. 19, No. 2, 15 January 1979, pp. 493-495.
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15. Note that we are using the term "neutrino" in a slightly different fashion from that of ordinary physics. In our nomenclature, a bare **neutrino's** magnitude in the S-frame would be something like h/c in magnitude, but would be **one-dimensional**. What is presently called a neutrino or an **antineutrino** exists, in our theory, as a rotating flux in a photon; i.e., we consider (after Ruderfer) that the photon is composed of two **contrarotating** neutrino fluxes. In my **model**, the rotating neutrino flux is of h/c -sized bare neutrinos; ordinary physics considers the entire $h/2$ rotation the neutrino, and does not **really** address its dimensionality. Thus in my **model** the bare neutrino has a basic velocity of c^2 , but is simply rotating in an electromagnetic carrier. Detection of a neutrino is simply the stripping out of one of the **whirling** fluxes from the electromagnetic field; hence ordinary measurements measure the velocity of the electromagnetic carrier, not the velocity of the bare neutrino. For proof that the photon is comprised of two contrarotating **neutrinos**, see **M. Ruderfer**, "Neutrino Structure of the Ether," *Lettere Al Nuovo Cimento*, 8 May 1975.
16. E.g., by **Einstein's** postulate, with respect to an observer standing on any free electron in the S-frame, any free photon in the S-frame is traveling at the speed of **light**, c . Yet if the observer now stands on the free **photon**, then the free electron must be traveling at the speed c . In a closed **Minkowski** 4-space this violates special **relativity** -- yet if one does not accept the **gedankenexperiment**, that also destroys relativity because it acknowledges a preferred direction -- the velocity c can exist in one direction in the S-frame but not in the opposite direction. In our model the paradox is simply explained; "standing on the photon" **constitutes** entry into the S' frame. Looking at **his** feet, the observer would now discover he is standing on an ordinary piece of mass -- such as an electron -- **in** the S'-frame (this **looks** like the photon to the S-frame). He would now see the former S-frame electron he formerly stood on as a photon! Thus Einstein's postulate is saved, but only if an additional dimension is added to Minkowski 4-space.
17. Tom Bearden, "The Dennis Billings UFO," *Specula*, Vol. 1, No. 3, July-September 1978, pp. 17.
18. T. E. Bearden, "Virtual State Engineering and Its **Implications**," *Specula*, Vol. 2, No. 2, **April-June 1979**, pp. 23-38.
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- 24, If this sounds **strange**, mathematics and science are **replete** with far stranger but true paradoxes. E.g., one can cut a ball into a finite number of pieces and rearrange them to get two balls of the same size as **the original one**. While this **seems** shocking to **one's** naive "common sense," it is nevertheless true. See Thomas J. Jech, *The Axiom of Choice*, American Elsevier Publishing Company, Inc., N.Y., 1973, pp. 3-6 for the proof. Also see Romano M. DeSantis et al, "On the Analysis of Feedback Systems With a **Multipower** Open Loop Chain," October 1973, **Department** of Defense Documentation Center number AD-773 188 for proof that a system input with a finite energy may generate an infinite energy, **possibly** with a finite escape time, feedback system output. **This latter paper**, of course, would seem to have rather direct relevance to the Moray amplifier and the hyperspatial amplifier theory developed in **this** paper.

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QUALITY CONTROL OF THE UFO DATA BASE:

SOME SUGGESTED TECHNIQUES

JAMES E. OBERG

Spaceflight and 'flying saucers' have been linked in the public mind practically since the beginning of the modern era of UFOs in 1947. Ever since that time, many famous stories have appeared about UFOs seen on spaceflights, or about UFO sightings caused by actual human space activities such as satellites and rocket launchings and rocket re-entries.

Although the actual number of such cases is small in proportion to other types of UFO perceptions and reports, and is statistically insignificant in overall terms, such stories have an importance all out of proportion to their number. They include some 'classics' and some true 'spectaculars!', and therefore the research techniques which can be applied to them should be of interest to UFOlogists. Additionally, such cases are among the most "researchable" UFO reports — i.e., they possess the most impressive documentation available for researching any type of UFOs, and hence promise more than almost any other class of reports to be tractable to energetic and inspired research. Once such research has arrived at a prosaic explanation, the cases in question can then be used to calibrate UFO authors/lecturers/editors to see if they are reliable, trustworthy, honest, and whatever.

Such a function — that of allowing the calibration of UFOlogists and UFO publicists — may be the single most important function of this statistically small genre.

A wide variety of UFO cases can be gathered together into this class. First and foremost are the oft-repeated stories that astronauts and cosmonauts have encountered and photographed UFOs, but that this information is being withheld from the public (such stories come from France, Japan, Russia, New Zealand, and elsewhere, as well as from the USA). Other cases involve misperceptions of the motions of bright earth satellites such as the now-defunct Echoes (which have been succeeded by a large family of bright satellites) — although such misperceptions are not particularly common. Satellite re-entries can provide spectacular fireworks which are useful as 'control experiments' in eye-witness testimony and UFO publishing. Rocket launchings, too, can cause

very impressive-appearing UFO perceptions.

To stress again my point: such cases, in terms of numbers, are not large in the overall body of UFO reports. However, due to their highly technological nature, they can be more thoroughly researched and documented, and arrived-at solutions can be compared with what UFOlogists in general have written and said about them, usually without any attempt at research.

The "astronaut UFO" genre is by far the most spectacular. My conclusions on the subject are well known. There is not a single case where astronauts encountered phenomena which was not 'normal' in terms of expected spaceflight occurrences. Accusations of coverup are spurious if not fraudulent. And many of the 'best' astronaut cases involve deliberate falsification of evidence by writers.

There are unidentified and unexplained sightings by astronauts, I want to make clear - my conclusion is that such cases are not particularly convincing evidence for extraordinary stimuli. But to be fair, some of the objects seen and photographed by astronauts have not been identified; however, I find no compelling reason to believe that they were anything but what they appeared to be: other man-made space vehicles orbiting Earth.

The most famous case involved Gemini-4 pilot James McDivitt, who is the only astronaut to refer to a "UFO" in space (Cooper and Slayton have referred to experiences earlier in their flying careers) - but McDivitt makes it clear that his definition of "UFO" includes an unidentified man-made object, which is exactly what he thinks the "UFO" was. My own research suggests that the "beer-can object" was his own Titan-II booster, an identification with which McDivitt does not agree. If not, the object will remain "unidentified" but only in the sense that nobody has made the computer search to find out which satellite it might have been (whether NORAD was being less than forthright, due to security classifications on some Air Force photoreconnaissance satellites, is also unknown).

It should be mentioned that the famous "McDivitt UFO photo" of a 'tadpole smear', about which numerous UFOlogists (viz. Harder and Sparks) have made such a big fuss, has been identified by McDivitt as not the object he saw but instead a window glare. That's what McDivitt has said, and suggestions that he has been silenced, or compelled to lie about it as part of a government plot, can be dismissed as paranoid fantasies.

The most spectacular UFO stories about astronauts deal with several cases on Apollo-11, best exemplified in the National Enquirer last September. The cases can be traced back to either non-extraordinary events or to forgeries of ordinary photos, done in Japan in 1974 and since promulgated worldwide. The Enquirer story was based primarily on Soviet sources which have also received respectable hearings in U.S. UFO newsletters (viz., the Azhazha speech printed in the MUFON UFO Journal),

along with claims by **Chatelain** and **Beckley**.

Since these **Apollo-11** stories are totally spurious, it is a useful exercise to catalog the **UFologists** who have passed them on and often embellished them. It reads like a "Who's-Who" of **UFodom**, with **Hynek** heading the list (he has since denounced the stories and announced his 'regret' at having published them in *Edge of Reality*). Authors and publicists such as **Beckley**, **Hervey**, **Chatelain**, **Knight** (the recent **McGraw Hill 'Pictorial History'**), **Fawcett**, figure prominently, but the star is **Bob Barry**, who played the leading role in importing the Japanese forgeries and in widely publishing them in the U.S. along with fanciful fictitious "dialogs" by astronauts. **Barry's** involvement with such a patently phony UFO case is a clearcut demonstration of his overall judgment and reliability, and should dissuade those (*viz.*, **Stringfield**) who think they can extract useful and dependable UFO information from him.

Now this UFO genre can be tricky, and people do make mistakes. **Hynek's** recantation was one of the two most important ones, and mine was the other. It concerned the **Gemini-11** UFO (**Conrad and Gordon**, 1966) during which a solid tumbling object came close (within a mile) of the spacecraft and was photographed. **NORAD** said it was '**Proton-3**' about a hundred miles away, but **Maccabee** pointed out that the angular separation was too large. **Roach** (Univ. of Colorado report) concluded that what was seen was a family of fragments orbiting together, a downright silly suggestion which is impossible in terms of orbital mechanics (nearby objects will drift apart over a few hours, much less the months the vehicle had been in flight).

My mistake was in accepting the **NORAD** range and '**fudging**' it by making the original observation (and a correct one) that the object was decaying and was hence bound to be off schedule - since the positions were based not on radar tracking but on computer extrapolations of previous tracking. Such a '**fudge**' allowed me to conclude that the vehicle **Proton-3** could have been that close to **Gemini**, although orbital tracking predictions which I obtained from **NASA's Goddard Space Center** in **Greenbelt, Maryland**, did not allow the reconstruction of any such close pass - not even a pass as close as that predicted by **NORAD**. This was correctly pointed out independently by **Maccabee** and **Sparks**, using the data I had obtained. The conclusion is that the **Air Force's** identification of the object as **Proton-3** smells highly suspicious, since at no time was **Proton-3** within thousands of miles of the **Gemini**. The object, from the eyewitness accounts of the crewmen (including my own interview with **Gordon**) looked exactly like a man-made satellite following a normal circumterrestrial orbit, and I still have no difficulty in concluding that nothing extraordinary was involved -- except that perhaps the **Air Force** did know what it was and grabbed the next nearest object as an excuse. So if you like, the **Gemini-11** object can be called a UFO, via semantic manipulation - but isn't it up to UFO proponents to prove that it could not have been anything prosaic?

The **Apollo-12** 'UFO' had enough nonsense attached to it to share any

embarrassment widely. The story about the flashing object which suddenly darted away from the spaceship as astronauts were watching has been widely described (Beckley, Sparks, Hynek, Andrus, et al) but the scenario depends on a gross misinterpretation of the astronauts' jargon - the flashing object did not move away at all and was quite clearly one of the four SLA panels (LMgarage walls) jettisoned the previous day.

It must be pointed out that a handful of UFOlogists had resisted the popular rush to exploit "astronaut UFO stories", and hence showed uncharacteristic perception and judgment. They included John Schuessler, Stanton Friedman, Stuart Nixon, Coral Lorenzen, Jerry Clark, Margaret Sachs, and one or two others.

A typical UFO report involving the Echo satellite is the following, by L.F. of Plumerville, Arkansas, made on May 20, 1965, and received by NICAP on May 24. Two witnesses (L.F. and B.M.) described a point source of light crossing the evening sky from north to south. Although the possibility that it was a satellite did occur to them, there were sufficient variances to justify making the report: the object "halted momentarily" (L.F.) (cf Coyne??) and had done so repeatedly (B.M.); its color was like an Echo satellite but "with just a slight tint of green visible through binoculars" (L.F.); the total observation time exceeded seventeen minutes (too long to have been a satellite - cf Coyne??). Concluded L.F., "Had it not been for the object's intermittent halting in its course, I would have dismissed it as an artificial satellite."

As well he should have. Satellite 'prediction bulletins' can be obtained from 'code 512', NASA-Goddard, Greenbelt, MD 20771. Although microfilmed records can take twelve to fourteen weeks to show up and are frequently illegible for the days you need, I requested the Echo-I and Echo-II bulletins for the date in question and, using the table for conversion to other latitudes, found that Echo-II's orbit #6380 fit the UFO position and direction quite nicely (an instruction manual will also be provided on request). NICAP had not requested the Echo data but, wisely discounting the perceptual discrepancies, had labeled the case "probably Echo" - a good guess.

Alas, it is no longer as simple as that, since by now there are quite literally dozens of satellites bright enough to be plainly visible to the naked eye - as any amateur eyeball astronomer can testify. If the objects direction of travel can be fairly accurately determined, an equation can convert the azimuth to an orbital inclination which then will eliminate most possibilities. Further, an accurate measure of angular speed (preferably by means of an outstretched hand and a watch or highly practiced timing count) can be converted into a range of altitudes which can help eliminate further non-candidates. But even then there are uncertainties: the famous "zig-zag" photo published by Ray Stanford's PSI hillside UFO observatory had all of the characteristics of a satellite - west to east motion, appearance shortly after sunset (shortly before dawn is nice, too), apparent straight motion (the zig-zag turned out to have been a camera jarring), and white point source appearance. Yet when I checked the most likely candidates, in-

cluding Skylab, the Skylab S-II booster, the Pegasus objects, and several Soviet space station components, none of them fit. The task of checking smaller objects, which can appear as bright due to freak lighting conditions, was too great to tackle, so the "satellite-looking" object remains unidentified.

Sometimes, too, the object involves a fragment which burns up before a good fix can be made on it. Such a case is involved in the famous Zond-4 dispute in 1968. This case pitted **Klass** against Sparks, and drew in some misinformation picked up by Menzel (innocently enough) from the NY Times; later, as it was recounted in **Marcia Smith's** Library of Congress report on UFOs. I did some calculations of my own, which Sparks questioned (his disagreement was included in the report) and then endorsed (too late to be mentioned in the report) and then disputed (in his unpublished manuscript). Essentially, the object which was seen burning up across the U.S. Midwest, and which engendered some 'classic' UFO perceptions (see *UFOs Explained*) was almost certainly a piece of the Zond-4 booster rocket crossing the U.S. for the first time. **Klass** had been told as much by a NORAD official, but nothing in writing was produced by NORAD at that time. Although **Spark's** calculations purport to show that the Zond-4 debris (the main payload was by this time on its way to deep space) would not have been at the right place at the right time, my own calculations (confirmed by NORAD) showed that the debris trajectory matched the UFO trajectory very nicely in terms of time and direction. Since the southward-looking radars at Eglin AFB were not operational at that time, precise tracking data is unavailable (it should also be mentioned that this launching was the first of its type and consequently was not well understood by trajectory analysts). The bottom line is that **Klass** was correct in his identification of the fireball UFO as having been a piece of Zond-4, and **Spark's** objections are not valid.

Another spectacular satellite-caused UFO occurred over the Persian Gulf in August 1979 (reported in *National Enquirer*, Nov 6, 1979, and subsequently in other UFO magazine and newsletters). Since the eyewitness descriptions of the object were so strikingly similar to other horizontal meteors and satellite reentries (cf the New Year 1979 flap over Britain and Holland, as reported in *Skeptical Enquirer*, Summer 1979), the first step in research was contacting the Public Information Office at NORAD (phone: (303) 635-8911 x3523). The following day, a second call elicited the response that "we may have a match": the booster of the Kosmos-1121 spy satellite was on its final orbit of the earth before burning up, passing north to south right across Bahrein and Qatar where the sightings occurred.

The significance of this case is first that nobody who researched it in the Middle East (and this included two governmental agencies) contacted NORAD, nor did any of the UFO publications who passed on the story. Secondly, the eyewitness descriptions demonstrate typical misperceptions and embellishments, both of maneuvering and of intelligent flight control. Based upon the published accounts, but without the benefit of the NORAD computers, a 'solution' to the UFO would have been problematical.

The launching of the Kosmos-955 satellite on September 20, 1977, provides an even more impressive morality play of UFO research. This predawn space shot, from the super-secret Soviet military rocket center near Plesetsk, caused a plethora of UFO reports from northeast Russia, Estonia, and Finland. Because of the appearance of the sunlit exhaust streamers, it came to be known as the "jellyfish UFO".

The identification of this UFO with the Kosmos-955 launching has not been seriously disputed among serious UFO researchers. However, a closer examination of the typical eyewitness reports, and of the growing body of folklore in Russia about the event, displays an unpleasant pattern: imaginations ran rampant and inaccuracies totally swamped the actual perceptions. Range estimates were as close as 'a hundred meters' when it was three hundred kilometers away. Physical effects, both car stallings and damage (pavement holes and broken windows), were described in detail. Without the records of the Kosmos-955 launch, obtained from NASA Goddard to compute the launching time of the rocket, an identification of the UFO would have been highly unlikely.

More to the point of this report (such cases are not much of a problem in the U.S. but can be: see a real classic in the Sturrock report, concerning the Titan launch seen from Tucson), the treatment of this UFO allows the calibration of UFO experts. Official Soviet sources, unable to account for the case with a true explanation because of military secrecy, have resorted to an increasingly absurd family of explanations (the latest is 'glowing industrial smog from factories' - sort of a Russian version of 'swampy gas'). Russian UFO buffs have been equally absurd in their rush to endorse the extraterrestrial (but of course non-human) origin of the 'object' - and by such endorsements, often-quoted 'experts' such as Zigel, Azhazha, Zolotov, Kazantsev, Bozhich, etc., have been shown to be quite unreliable even with regards to domestic cases (just the opposite of what McCampbell wrote in the MUFON Journal last year). Western authors who have used the case, such as Gris, Garrison and von Buttlar, can be as easily calibrated.

The apparition of the rocket launching plume immediately came to mind when considering the excellent Colusa, California case (Pecha), in which an extraordinarily similar shape and motion was described. A check with Vandenberg AFB provided the information that a rocket had indeed been launched at nearly the right time - but it looked like the wrong day. The launching had been early on Saturday morning, and although the records were unclear, the Pecha case had evidently occurred early on a Friday morning. Attempts to investigate this possibility were hampered by the poor documentation of the sighting, even in such publications as the IUR from CUFOS, which did not specify direction or angular size of the object - which, as we all know, are the only real observations which can be made about a light in the sky. Despite these handicaps, it has apparently been possible to rule out a rocket launching explanation for the Colusa case, unless somebody rechecks their own unpublished records.

Let me close with an encouraging story concerning rumors and leaks

of classified data on UFOs.

In July 1978, a newspaper in Buenos Aires carried a dispatch from Moscow to the effect that UFOs had shadowed the cosmonauts of the **Salyut-6** space station earlier that **year**. A Soviet general disclosed the story to "a high military command of a Latin American country during his recent visit to the **USSR**".

A formation of flying saucers had followed the Soviet spacecraft for three hours, during which cosmonauts **Romanenko** and **Grechko** took many pictures. After the flight, copies of the pictures were sent to NASA in secret.

It was easy to dismiss the whole story as just another fable (checks with the appropriate offices at NASA indicated that nothing of the sort had ever **arrived**), but it turned out that the rumors were based on an actual event - but greatly embellished via the Russian love of UFO stories, a love apparently tolerated by the government as a harmless diversion of intellectual **dissent**. According to an account published as part of an **anti-UFO** tirade in **PRAVDA** on March 3, 1980 (and its own authenticity must be judged on these **grounds**), cosmonaut Grechko explained the origin of the story:

"Once we got a cheerful call from Mission Control that '**flying saucers**' were following us." the cosmonaut recounted. "We took a look out the porthole and - really] - something like that was flying not far from our space station. Then it became clear: this was just containers with trash, and they accompanied us until the **Salyut** changed **orbits**." (translated by the **author**).

Grechko's account makes sense, since the Salyut does have a twin '**trash airlock**' system through which basketball-sized containers of waste (food wrappers, dirty clothing and linen, scrap paper, etc.) are periodically ejected. They fly along near the station until they decay and burn up. I have inspected the log in the "Satellite Situation Report" (NASA Goddard) which catalogs the '**decayed objects**' associated with each Salyut expedition; they are prodigious **litterbugs**.

But the happy lesson to be drawn here is that however wild a rumor may seem, or however questionable its source, it may still be based loosely on an actual event - with a significant, often overwhelming, '**garble factor**' familiar to oral historians. This UFO story is evidently another '**classic**' in the Russian UFO underground, and it, like all the others, deserves to be carefully catalogued and evaluated - but not taken at face value]

The conclusion of this report is that UFO reports based on space events - **spaceflights**, satellite burnups, rocket **launchings** - may not be significant in terms of overall populations of UFO reports, but they are important in providing cases which can be researched more precisely than most other UFO cases. They can provide solutions against which the original perceptions can be matched in a valuable series of "control

experiments" to determine -- and remind us all -- the limitations of human perception and memory. Lastly, such '**solved**' cases are not just **IFOs** for the record book. They are test calibrations by which the judgment and reliability of UFO specialists and authors can be judged, and the experience to date with such tests has not been encouraging for those who would like to think they can rely on published accounts of other UFO incidents. Additionally, strident claims about official NASA **coverups** and secrecy (Barry, Goodavage, Don Wilson, George Leonard, Alan Sandier, Michael Cohen, John White) are shown to be totally without foundation, and similar claims from the same sources regarding other government agencies should be viewed in this light.

Insofar as such cases have crept into the body of generally accepted UFO folklore, the skeptics will be entirely justified in maintaining that the "UFO data file" is hopelessly polluted with counterfeit **UFOs**, and that no conclusions about extraordinary stimuli allegedly behind **some** UFO reports can ever be convincingly made. The techniques developed for these '**space UFOs**' may be useful in weeding out such imposters and in demonstrating (if possible) the validity of the UFO data base... but my experience is that such '**weeding**' leaves no detectable paydirt.

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Among his recent papers and presentations are included "Significance of Intracellular Electrical Potentials of Human and Animal Mononuclear Cells," Nice, France, December, 1979; "Variations in the Transmembrane Potentials of Activated Lymphocytes and Monocytes," The French Society of Immunology, June, 1979; and "Correlation Between Macrophage Intracellular Electrical Potential and Malignant Melanoma Growth in a Murine Model," 1980.

Niemtzow was instrumental in arranging the Joint Post Graduate Medical Exchange Program between the Faculty of Medicine, Montpellier, and the University of Texas Medical Branch.

He will be a speaker and committee member for the forthcoming International Symposium of Fundamental Mechanisms in Human Cancer Immunology scheduled to be held in Galveston in October of this year.

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PRELIMINARY ANALYSIS OF MEDICAL INJURIES**AS A RESULT OF UFO CLOSE ENCOUNTERS****RICHARD C. NIEMTZOW, M.D.**

Many of the witnesses of close encounters associated with the UFO phenomenon report substantial medical injuries. (Reference 1). These injuries may be classified into three categories (see Figure I). The first category is of a temporary nature, dealing with paralysis, dizziness, nausea, vomiting, headache, blindness from intense light, perception of odors and high frequency audio sounds. Associated with this first category of symptoms is usually a parallel event having for purpose the immobilization which may occur while the subject is driving an automobile and is manifested by failure of the electrical system and the motor either diesel or gasoline. The subject is then paralyzed. Emphasis is placed on the paralysis as being a separate entity distinguished from immobility provoked by fear. A distinct characteristic in the majority of cases is that any paralysis occurring while the subject is ambulatory does not cause him to fall. This is very important since complete paralysis of all muscles not only would be manifested by falling but may also ensue death. This paralytic process seems to avoid the vital function of the organism and life is maintained. (Reference 2).

In UFO paralysis one notices that consideration of nerve fiber types and functions is important. In general the greater the diameter of a nerve, the greater its speed of conduction. The larger axons are concerned with proprioceptive sensibility and somatic motor function. The smaller axons are responsible for pain and **autonomic function**. α fibers comprising the voluntary motor nerves going to the arms and legs are essentially affected. On the other hand fiber type γ which provide necessary autonomic functions to maintain bipodal station or standing are **respected**. **Pre-ganglion** and post-ganglion sympathetic and para sympathetic nerves of small diameters appear unaffected as death would result or the witness would report more somatic complaints (see Figure II).

Unfortunately there is insufficient data to explain the mechanism of paralysis. (Reference 3). It may be possible to hinder the action potentials of a nerve without producing **tetanzation** and effectively achieve a state of immobility. The autonomic nervous system may be placed in a quasi balanced state during this **phenomenon**. Perhaps paralysis, although aimed at the peripheric nervous system, is the result

of an unknown process focused on the brain.

The second category deals with the more caustic effects usually associated with skin lesions resulting from unknown mechanisms. These skin lesions which previously were described as burns produced by high temperatures must have other etiological origins. I doubt whether these lesions represent ultraviolet radiation or megavoltage photon or electron skin reactions. In the Tyler, Texas case which is a close encounter of the third type occurring in January of 1979, a diamond shaped skin lesion appeared on Scott's chest. Initially it peeled off in large slabs, but did not fade away (see Figure III). Anatomically it was well situated on the center or midline of the chest. The pink coloration of the lesion was not consistent with depigmentation associated with high megavoltage photon or electron radiation. One had the impression of a chronic inflammatory process; however, the skin was of normal temperature and had a silky like texture. The borders were well defined after more than 10 weeks and still visible and slightly pink. This would not be consistent to that observed in heat producing burns. Topical steroids may be helpful in resolving this lesion. Antibiotics are useless as learned from a private communication and different case.

In addition on Scott and Ron was evidence of a small puncture on both shins. On both boys, these punctures were made to avoid the tibia bone and were symmetrical. I do not know what this represents or means. In this case no attempt was made to treat these lesions.

The third category may involve parapsychological manifestations which may interrupt normal emotional behavior. The literature has many examples of episodes of telepathic communication, etc. It is rather difficult to study these phenomena from the cases. Visual as well as audible sounds have been reported by the witness. In the Tyler case I had the impression that the subjects may have been extremely anxious by their experience and hence had their senses heightened. They reported audio and visual hallucinations. These seemed to occur rather frequently. Ron Stated that he experienced audio sensations in his head when he drove to the location where he had the encounter. Reports of his nature can only be of speculation; their usefulness remains unclear.

Unfortunately the majority of witnesses of CEIII cases have not been medically studied. In cooperation with the French GEPAN group which is an official government agency actually studying the unidentified flying object problem we had the opportunity in December, 1979 to medically study the Fontaine case. The following medical tests were recommended.

(1) COMPLETE BLOOD COUNT WITH DIFFERENTIAL

Net increases in the number of white blood cells have been reported resulting from exposure to weightlessness during various manned space missions. (Reference 4). A reduction in the lymphocyte population will result if exposure to ionizing radiation is encountered. Suppres-

sion is also seen under stress situations due to release of glucocorticoids (reference 5) or **weightlessness**. One can expect an increase in neutrophils and a decrease in monocytes, eosinophils, and **basophils** in **weightlessness**.

(2) SERUM CORTISOL

Diurnal fluctuations are known to exist for serum cortisol; as well as in sodium and potassium excretion. Cortisol tends to peak near the early morning **hours**. Rapid displacement from geographical location and time zones may disturb this rhythm.

(3) WEIGHT LOSS

All but one U.S. astronaut has lost weight in space.

(4) SERUM AND URINARY POTASSIUM, SODIUM, AND CHLORIDE

Serum and urinary potassium, sodium and chloride retention have occurred in **postflight** observations of astronauts; with weightlessness producing an important potassium loss and consequential abnormal cardiac rhythms.

(5) URINE CALCIUM AND PHOSPHORUS

Urine calcium and phosphorus may be increased.

(6) URINARY **KETONE**

Starvation should cause the formation of urinary ketone bodies. (Reference 6).

(7) SERUM GLUCOSE

This is a baseline test.

(8) CHEST X-RAY

A standard chest X-ray should be taken.

(9) BIOPSIES OF SKIN LESIONS

The aforementioned tests are suggested as a baseline for an indepth study of medical injuries resulting from UFO close encounters. These simple tests, if administered by qualified physicians, can be in the best interest of the witness (i.e. patient), as well as providing valuable data on the reported incident. Because of the lack of data to date, a number of assumptions must be considered - test to determine if the witness was subjected to prolonged **weightlessness**, moved from one geographical location to another, prevented from receiving nourishment, etc. The results of this study should be quite valuable in assessing the credibility of future close encounter reports.

In the Fontaine case, all of the tests were within normal limits. We were not able to determine any **abnormalities**. On the other hand, it is not even certain because of our limited experience whether these tests would be of value. In any case cooperation between VISIT and GEPAN in the medical area is an ongoing experience. We trust to make another report when we have reviewed and studied more cases.

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FIGURE I

THE PARALYSIS: A CLINICAL SKETCH BASED ON REPORTS

| | |
|-------------------------|---|
| Skin: | Burns usually 1st degree |
| Head: | Headache, dizziness |
| Eyes: | Temporary blindness, inflammation, pain |
| Ears: | Perception of sound |
| Nose: | Perception of smell sometimes reported |
| Mouth/Throat: | Paralyzed; Speechless |
| Endocrine system: | Difficult to evaluate |
| Hematological system: | Pathological manifestation if atomic radiation greater than 100 Rem. |
| Arms: | Paralyzed |
| Legs: | Paralyzed; Subject does not fall |
| Respiratory: | Obviously sometimes functions with difficulty |
| Cardio-vascular: | Obviously functions with normal limits |
| Gastrointestinal: | No information |
| Genito-Urinary: | No information |
| Central Nervous System: | Cognition: sensorum and intellect intact . parapsychological manifestations reported: telepathy |

FIGURE II

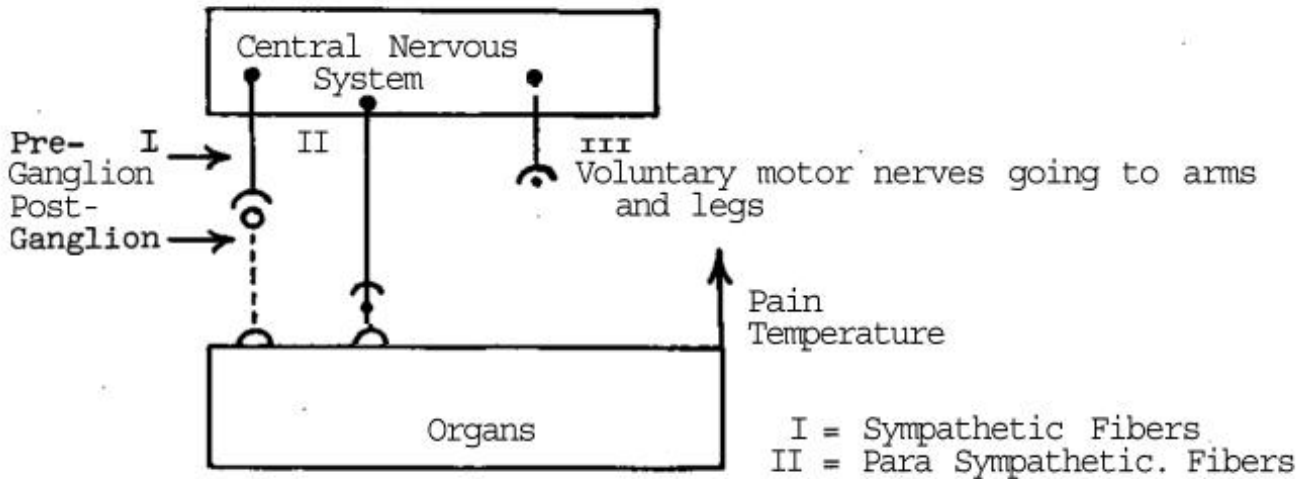


Figure 2
Human Nervous System
Extremely Simplified

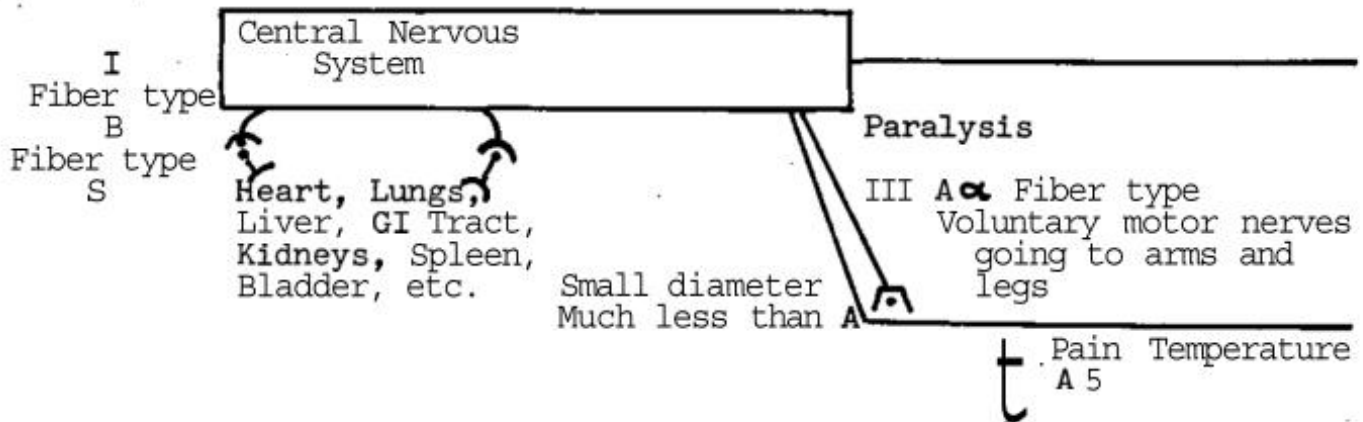
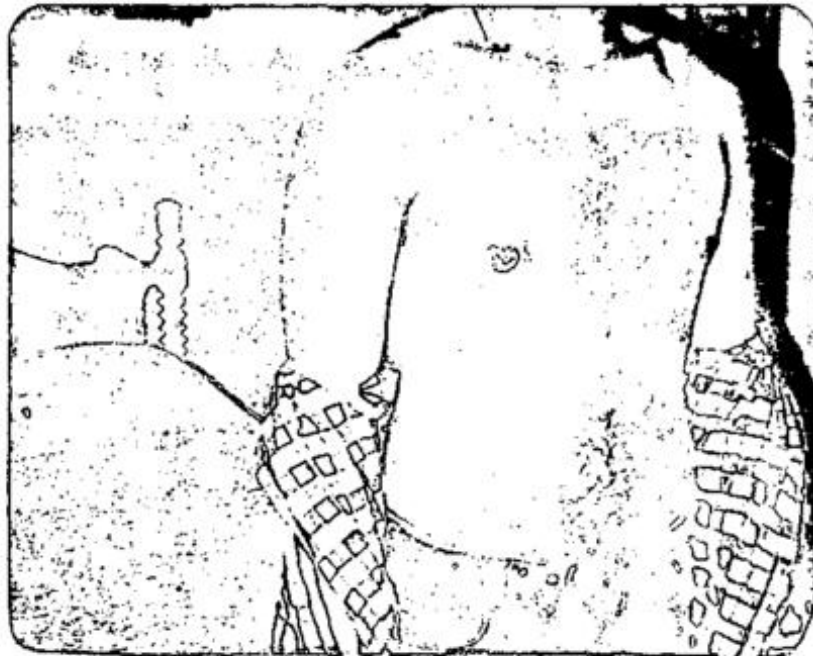


Figure 3

| Fiber Type | Function | Fiber Diameter (μ) | Conduction Velocity (m/sec) | Spike Duration (m/sec) | Absolute Refractory Period (m/sec) |
|------------|-------------------------------------|--------------------------|-----------------------------|------------------------|------------------------------------|
| A α | Proprioception; somatic motor sense | 12-20 | 70-120 | 0.4-0.5 | 0.4-1 |
| 9 | Touch, pressure | 5-12 | 30-70 | | |
| Y | Motor to muscle spindles | 3-6 | 15-30 | | |
| 6 | Pain, temperature | 2-5 | 12-30 | | |
| B | Preganglionic sympathetics | 3 | 3-15 | 1.2 | 1.2 |
| C d.r.* | Pain | 0.4-1.2 | 0.5-2 | 2 | 2 |
| S.+ | Postganglionic sympathetics | 0.3-1.3 | 0.7-2.3 | 2 | 2 |

*Dorsal root C fibers
+Sympathetic C fibers

FIGURE III



A diamond shaped skin lesion appeared on Scott's chest. Tyler, Texas case in January 1979

STANTON T. FRIEDMAN

Stanton T. Friedman is the nation's only space scientist presently devoting his full time to the UFO phenomena, both in terms of active research and the dissemination of relevant information.

Mr. Friedman received his B.Sc. and M.Sc. in physics from the University of Chicago in 1955 and 1956. From graduation until 1970, he was employed in the aerospace industry working for such firms as General Electric, Aerojet General Nucleonics, General Motors, and Westinghouse. His experience included involvement with projects ranging from nuclear fission and fusion aircraft propulsion systems to nuclear powerplant applications in space.



Having actively investigated UFOs for more than 20 years, Stanton has become convinced that the data for extraterrestrial visitation is overwhelming and inescapable, a conclusion he has effectively illustrated and presented before more than 450 university and professional audiences in 47 states and 4 Canadian provinces. One of twelve scientists participating in Congress' 1968 Scientific Symposium on UFOs, he has also testified before the United Nations (1978), and served as technical advisor to a number of UFO documentaries and films; the most recent being the award winning documentary, "UFOs Are Real." (1979)

Mr. Friedman is a member of the American Nuclear and Physical Societies, the American Institute of Aeronautics and Astronautics, MENSA, and the British Interplanetary Society. He serves MUFON as a Consultant in Nuclear Physics and has presented papers previously at the 1971 St. Louis, 1973 Kansas City, 1974 Akron, 1977 Scottsdale, and 1979 San Francisco, MUFON Symposiums.

He now lectures about UFOs on a full-time basis and should be contacted at the following address, where he currently resides with his wife and 3 children: 31628 Trevor Avenue, Hayward, CA 94544.

FLYING SAUCER TECHNOLOGY

STANTON T. FRIEDMAN

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INTRODUCTION

Since there has been so much technological advancement over the past 100 years, it might be useful to provide some notions about technology that will help us understand a better approach is needed to the scientific examination of UFO observations than the frequently made statements that the reported behavior of UFOs is impossible, or violates the laws of physics. Some of these ideas may seem obvious to those involved in research and development programs in industry. But the many silly statements I have heard over the past decade while lecturing in 48 states and 6 Canadian provinces indicate they need repetition.

1. Technological progress almost invariably comes from doing things differently in an unpredictable way. The future, TECHNOLOGICALLY SPEAKING, is NOT an extrapolation of the past. Pocket calculators do NOT just use smaller gears and wheels and cogs than went in to the old desk calculators of 25 years ago. They do NOT use vacuum tubes - miniaturized or otherwise - either. It took an enormous amount of time, energy, research, and money to switch from gears to electronic tubes to transistors and finally to microintegrated circuits. The gear specialists did not predict or invent the microcircuitry.

2. Don't try to use an old technique to achieve a new objective. Bicycles are fine for getting around a campus but certainly inappropriate for crossing oceans.

3. Let nature do as much of the work as possible. The winds that push balloons and sails; the rotation of the earth; the gravitational fields of the moon, Jupiter, and Venus; all have helped greatly in our exploration of the "local" neighborhood...at no charge. For example, one of the biggest mistakes made in the 1940s by "rational" but grossly-in-error astronomers was in thinking that the only way to slow down a rocket returning from the moon was to fire a retrorocket as it approached the earth. Unfortunately each pound of propellant used on the way in had to be launched from the earth, slowed down at the moon,

launched from the moon and slowed to some extent as it neared **Earth**. Using the atmosphere itself to slow down the rocket is enormously more efficient. Automobile engines use the air around them rather than carrying their **own**.

4. As an extension of 3, the **HOW** is crucial NOT trivial as **assumed** by the noisy **naysayers** anxious to prove every far out technological objective is **impossible**. The underlying assumptions are what determine whether or not the objective can be attained, NOT the straight forward usually simplistic **energy balances**. For **example**, using multi-staged chemical rockets instead of single staged ones involves no new physics but drastically changes the feasibility of achieving **orbit**. Using a maximum acceleration of close to 8Gs on the way to orbit is very much more efficient than limiting oneself to **1G**.

5. As Archimedes might have **said**: Look for the **lever**. Find the places where small improvements in one part of a system can greatly improve another **part**. If the payload is 2% of the total weight of a rocket, then a 2% saving in the weight of the structure increases the payload by **100%**. At very high velocity in air or underwater reducing drag may be far more useful than increasing thrust.

6. As an extension of 5, stop thinking **linearly....reality** very often is NOT linear. Doubling the speed at burnout of a launch rocket reduces the time to the moon by a factor of 20 not a factor of 2....**at** least with our present Saturn launch **vehicles**. Because it took 70 hours for the Apollo astronauts to get to **the** moon does NOT mean that to go 100 times further would take 100 times as long or 100 times as much **energy**.

7. Focus on the **relevant**. I learned in 14 years of radiation shielding work that it is the very small fraction of the radiation which leaves a reactor that leaves the shield that bothers people **going** by, not the very much larger (perhaps a billion times) fraction which gets absorbed by the shield.

8. To those making pronouncements about technological **impossibilities**—DO YOUR HOMEWORK about **today's** most sophisticated technology before shouting about tomorrows. Most technological development programs possibly related to an understanding of flying saucer technology have been done in **secret** in industry and NOT in academia. The results are usually published in the form of classified, limited distribution technical documents and not in the open popular scientific **journals**. DO NOT ASSUME that because your favorite academic journal carries nothing about nuclear rockets or **magnetoaerodynamics**, that no work has been done. The present annual U.S. budget for the development of laser weapons is about 1.25 billion dollars per **year!**

9. For those who seek to dazzle with numbers, PLEASE use units that make sense and can be related to the real world of average people. Acceleration is a meaningful concept and **can** be expressed in units such

as "miles per hour per second" rather than the totally meaningless-to-most-people unit of "meters per second squared" or "feet per second squared". The speed of light can also be expressed in units of miles per hour rather than miles per second. Distances can be expressed in terms of light **seconds**, light minutes, light **hours**, and even light weeks as well as in terms of just light years or miles. Power levels can be compared with the output of Grand **Coullee** dam instead of just given in **watts**.

10. Look at specific situations NOT at averages. People who are six feet tall do drown in pools whose average depth is 3 feet. Because there are galaxies billions of light years away and because some asinine ancient academic or silly science fiction writer "computes" (on the basis of NO data) an average distance between civilizations of 100 or even 13,000 light years does NOT mean that the closest one or the one we wish to reach is that average distance away.

In summary flying saucer technology should be looked at from the vantage point of 1980 not 1880.

FLYING SAUCER TECHNOLOGY

Deducing from a mountain of evidence that some flying saucers come to earth from nearby solar systems (there are 1000 stars within 55 light years, 46 of which are very similar to the sun) immediately raises two questions: 1. How can one travel from a nearby solar system to Earth in a reasonable time? 2. Once here, how do flying saucers behave in the unusual way they are observed to behave? There are many reports of extremely high speed flight in the atmosphere (thousands of miles per hour) coupled with the ability to stop and start abruptly, to move up and down and back and forth seemingly with none of the limitations of conventional aircraft. Typically there are no visible external engines, wings, or tail. Usually the objects are relatively silent compared to conventional craft. Often unusually colored glows are observed adjacent to the craft and a variety of physical and physiological effects are produced on living and inanimate objects in the **vicinity**. These are truly technological challenges.

The problem must be divided into two parts because there is no good reason to assume that the same propulsion system is used for both the long haul and local portions of the trip. It seems far more reasonable to assume that the huge cigar shaped so called "mother ships" into and out of which the smaller disc-shaped craft fly are interstellar vehicles and the others are Earth Excursion Modules for local travel. Mother ships are rarely observed cavorting close to ground level. In **Ted Phillips'** huge collection of landing trace cases, (over 1930 from 64 countries) more than 95% of the low level vehicles are disc-shaped. A useful analogy here is the aircraft carrier Enterprise which is nuclear powered on the ocean and operates at low speed without refuelling for many **years**. The 75 much smaller aircraft it carries cannot operate on the ocean but can fly at high speed and altitude for very short

times, are highly **maneuverable**, but are not nuclear powered. Note, too, that the carrier provides sleeping, amusement, repair, eating, storage, rest and relaxation facilities none of which are provided by the **smaller airplanes**. The carrier also stores fuel for the airplane while the airplane provides none of these facilities for the **carrier**. Neither system could replace the **other**.

The problem of travelling to the stars must also be viewed from an entirely different perspective than is useful for understanding our recent manned flights to the moon or instrumental approaches to the other **planets**. Distances within the solar system can be measured in light seconds, (Earth to moon is 1.3 LS) light minutes, (Sun to Earth is 8 LM) or at most a few light **hours**. Stars are at least several light years away, though Zeta 1 or 2 **Reticulans** need only travel 2.5 light weeks to visit their nearest stellar **neighbor**. Our chemical rockets get astronauts to the moon in about 69 hours and the Viking spacecraft to Mars in about 10 months, but have forces other than **gravity** acting for only 17 minutes or one hour respectively! The rockets are coasting and slowing down until close to the target for almost the entire **trip...similar** to an arrow shot **upward**. The Apollo spacecraft at an altitude of 200,000 miles is going only 2000 **mph** though it **left** the vicinity of Earth at 25,000 **mph**. If it had been able to accelerate at just 1 G (21.8 mph per second) for any reasonable time the final velocity would have been as shown in Table 1. Peak acceleration during an Apollo launch is actually close to 8Gs (174 mph per second). In just 1 day at 1 G, one would reach a velocity of almost 2,000,000 **mph**, and would be long since out of the Earth's gravitational field. For each minute of operation near the earth, gravity effectively pulls one back about 1300 **mph**. In deep space there is practically no **gravitational** or atmospheric "**friction**". It is extremely important to recognize that it takes only approximately 1 year at 1G to get close to the speed of light - about 670,000,000 **mph...and** that there may be refueling or rest and relaxation centers at locations between the stars so that visitors need not have necessarily come directly from their home base **just** as athletes and other performers such as speakers frequently go from town to town without going home in between. Unfortunately, chemical rockets such as have been used by earthlings are by their very nature extremely limited in their ability to provide high velocities in their short operating times because of their great inefficiency.

Starship and Earth Excursion Module designers are thus faced with 2 obvious questions: 1. How much acceleration can people stand for how long? 2. What method can provide far **more** miles per hour per gallon than chemical rockets either by operating for much longer times or at higher accelerations?

The amount of acceleration a person can stand depends on many factors. The three most important **are**: A) The duration of the **acceleration**. The greater the force the shorter the duration it can be withstood. B) The direction of the force with regard to the body. Back to front acceleration is much easier to handle than head to foot acceleration. It should be noted that astronauts have their backs perpendicular

to the direction of thrust rather than along it as in a. elevator. C) The body environment is important. A person immersed completely in a fluid can withstand much higher accelerations than when not so immersed. Figure 1 illustrates some of the variables. Note that a trained and highly motivated pilot can perform a tracking task while being accelerated at 14Gs (about 300 mph per second) for 2 minutes! Starting from rest he would be moving at 300 mph in one second, at 3000 mph in 10 seconds and at 36,000 mph at the end of 2 minutes! Obviously conventional propulsion systems such as airplanes, trains, buses and cars cannot provide 14Gs for 2 seconds no less 2 minutes! A drag racer achieving 218 miles per hour in 10 seconds would have an average acceleration of only 1G. A trained person properly constrained, can even stand 30Gs for one second without damage - that's zero to 650 mph in one second! The data strongly suggest that very much higher accelerations can be withstood for very much shorter times. Reports of EEM flight very often indicate that the high acceleration - such as when making a nearly right angle turn or changing altitude - takes place in an extremely short period of time. In modern physics and technology, the primary method for providing very high forces for very short period of time is the use of electromagnetic forces such as with lasers, magnet forming of complex shapes, and the acceleration of nuclear particles to velocities close to that of light.

There is a general tendency to think in terms of slow gradual acceleration with the engines chugging away as in cars, planes, trains, etc, and the gradual achievement of a particular cruising speed. However, in the case of flying saucers, it is clear that the period during which a change in velocity (increase or decrease) usually takes place is very short and most of the flight occurs at a steady velocity. Big pulses seem to separate longer flights at a constant velocity. Some of today's most powerful lasers can dump huge amounts of power in very short times. Some for example operate at billions of watts for billionths of a second. The total energy involved is small but the very impressive effects produced are very different from those that would be produced by operation at a very much lower power for a very much longer period of time. A watt for a second is simply incapable of producing the same effects as a billion watts for a billionth of a second. Physics International in San Leandro, California, operates one device for simulating certain aspects of nuclear weapons at a power level of 5 trillion watts or much more than the installed electrical production capability of our planet. One consequence of the use of very intense, very short pulses of energy would be the inability of an observer to really judge what was happening. The eye is a poor instrument at times much less than 1/20th of a second no less a billionth of a second.

One might think of a saucer moving along at high speed stopping with a big burst or pulse of energy oppositely directed and then sent off in a direction at right angles to the original direction with another short but powerful pulse. Acceleration times might be measured in micro- or milliseconds and inhabitants would not be affected just as one isn't burnt by a hot potato dropped sufficiently soon after being picked up.

The forces on the vehicle would come from interactions between electrical and magnetic fields produced on board the EEM and the surrounding temporarily electrically conducting fluid known as **air**. The energy of braking could even be dumped into a fly wheel much as the brake linings on cars absorb braking energy or possibly in a channeled flow of electrically conducting air, thus also accounting for the color changes frequently observed around **UFOs**.

In the mid 1960s an electromagnetic submarine **designed** by Dr. Stuart Way on leave from **Westinghouse** Research Laboratory was successfully tested at the University of California, Santa Barbara. It made use of the fact that electric and magnetic fields at right angles to each other produce a (Lorentz) force at right angles to both. The force pushes against the surrounding **electromagnetically** conducting fluid (seawater) which pushes back and moves the **submarine**. It is possible to envision an airborne analog in which seawater is replaced by ionized electrically conducting air and conventional electromagnetic fields are produced by superconducting magnets, needing little space, very little power and weight, and generating very high magnetic **fields**. Substantial research, much of it classified, has been done showing that a **magnetoaerodynamic** system would be capable of solving all the problems of high speed flight by controlling lift, drag, heating and sonic boom production - all electromagnetically rather than mechanically or chemically. The resulting system would be symmetric, highly **maneuverable**, relatively silent, often have a glow around it and be capable of sudden starts and stops. It could carry its own power supply or be charged up aboard a mother **ship** much as a golf cart does not carry its own power supply but only a **storage battery**. The fuel for carrier planes, remember, is provided by the carrier, not the planes themselves. The reason much of the research on MAD propulsion systems is classified is because the nose cones of ballistic missiles create an ionized air **region** around them as they reenter the **atmosphere**. Modifications of the nose cones can be used to vary the radar profile, **lift**, drag, flight direction and other important parameters without carrying along fuel or **propellant** such as would normally be required. It should be stressed that such systems work by interacting with their surroundings and **not** by **carrying** along something thrown out the back **end**. A real benefit is derived from producing very high magnetic fields since a field ten times as **great** produces 100 times as much force.

For the interstellar trip, the obvious first choice, though undoubtedly not the ultimate choice, for replacing primitive chemical rockets is a nuclear rocket. Though most people are unaware of any nuclear propulsion systems besides the navy developed submarines and surface ships, there have been several other programs for the development of airborne or space propulsion systems. Jet engines were successfully operated on nuclear power for the Aircraft Nuclear Propulsion program. As early as 1958 by General Electric, a small nuclear Ramjet (TORY 2-C) was successfully ground tested in 1963 at 600 megawatts as part of the PLUTO program. An entire family of nuclear rockets were successfully ground tested during the **NERVA** (Nuclear Engines

for Rocket Vehicle Applications) **program**. Most of the work involved in these multi-million dollar a year programs was classified and was conducted by industrial contractors in conjunction with national laboratories under the direction of NASA, the Air Force, and/or the old Atomic Energy **Commission**. All of the above systems utilize nuclear fission of the Uranium 235 nucleus to produce huge amounts of heat by the conversion of a small amount of mass into a large amount of energy. Millions of times as much energy per pound can be produced as compared with burning rocket fuel.

The design and development of nuclear flight propulsion systems requires the solution of very real problems associated with complex nuclear physics, sophisticated hardware operating at very high temperatures, and the lethal radiation produced by the fission process. Similar problems though not as difficult were **solved** first for nuclear weapons and then in the production of large, relatively low temperature, submarine and surface ship and stationary nuclear power plants. The primary difficulty in employing fission for space or atmospheric propulsion systems is that associated with the weight and high performance limitations of such **systems**. Large ships weigh more than 100,000 tons. **Airplanes** weigh fewer than 400 tons and even the huge Saturn 5 rocket weighed only 3000 tons fully **fueled**.

Despite the problems, the NRX A-6 nuclear rocket reactor propulsion system was successfully tested in December, 1967, by **Westinghouse** Astronuclear Laboratory at a power level of 1.1 billion watts in a package less than 10 feet long and under 5 feet in **diameter**. In June, 1968, the Los Alamos Scientific Laboratory successfully tested the **Phoebus-2B** at a power level of 4.4 billion watts and with a diameter under 6 **feet**. The old Grand **Coullee** Dam produced 2.2 billion watts for comparison. All the **NERVA** and preceding **KIWI** and **Rover** systems used solid fuel through which was pumped liquid hydrogen which changed to a gas and was exhausted through a nozzle. Since hydrogen has the lowest weight of any molecule, for the same energy it will achieve a higher exhaust **velocity**. One also saves the weight of the oxygen and its associated tankage. More advanced systems have been designed in which the U-235 is in a very high-temperature gas form and which would provide far higher exhaust temperatures for the hydrogen. Even nuclear reactors have been operated with the fuel in a gaseous form.

Of considerably greater interest from a long term viewpoint would be fusion propulsion. Fusion is the nuclear process involving the combining of light nuclei to make heavier ones and, as in fission, converting a small amount of mass into a huge amount of energy. It is the primary process for producing energy in most stars and in so-called hydrogen **bombs**. A civilization would certainly be aware of the fusion process as that civilization reached a minimal level of scientific maturity. There are many different reactions and processes which can be used in both fission and fusion devices. One of the most attractive for an interstellar fusion propulsion system would be to cause the reaction of just those particles which, when made to fuse, produce only charged rather **than** neutral **particles**. These very high energy charged

particles can then be directed out the back of the rocket using appropriate electric and magnetic fields. Neutral particles on the other hand, come off in all directions and cannot be directed or controlled, only slowed down and their heat absorbed, a very inefficient process. Using the right reactions in the right way, a space fusion propulsion system can be designed to exhaust light ions having more than 10,000,000 times as much energy per particle as they can receive in a chemical rocket. A second advantage of considerable interest is that the fuel or propellant for a fusion rocket would be isotopes of hydrogen and helium which are not only the lightest elements but are also by far the most abundant in the universe. Thus, one could be certain of finding the raw material for a fusion fuel stockpile at any star system to which one travelled.

There have been a number of published studies showing that staged fission and fusion deep space propulsion systems are capable of round trips to nearby stars in times shorter than a typical person's life span. Chemical rockets would be used to launch starships into orbit or to the moon for launch from there because of the greatly reduced energy requirements. Clever mission design would also be employed such as was used for the lunar landing program. Full advantage would be taken of every free loading possibility, just as the Apollo vehicle took advantage of the earth's high rotation to the East near the equator, of the gravitational field of the moon, of staging on the way and of the use of the earth's atmosphere, rather than retrorockets, to slow it down on the way back. The final weight and cost are almost entirely dependent on the design assumptions rather than (as so often assumed by academic calculations) independent of those design features. An early study of the required launch weight of a chemical rocket capable of sending a man to the moon and back concluded that the launch weight would have to be a million million tons. It was accomplished less than 30 years later with a chemical rocket weighing 300,000,000 times less. Stars and planets along the way could be used for their fuel, solar energy, and gravitational assists, just as the Pioneer spacecraft (without propulsion systems after leaving the vicinity of Earth) used the immense gravitational field of Jupiter to hurl them past Saturn and (eventually) out of the solar system.

Earthlings would be capable of building both fission and fusion deep space propulsion systems should they be willing to expend the tens of billions dollars required. They are, however, not the only possibilities for interstellar travel. Several other possibilities include the following:

1. Lasers based on the earth, or in orbit, or on the moon, to be aimed at the back of the rocket spalling off material which would exhaust towards the laser and push the rocket forward. This has the advantage of putting the power supply elsewhere than on board the rocket.
2. Systems producing energy by whatever as yet unknown process power the strange stellar beasts known as quasars. Watts per gallon of fuel are enormously greater in a quasar than in a typical fusion powered

star like the sun.

3. Systems utilizing whatever type of force holds subnuclear particles together. In the nucleus involved in fission and fusion the amount of energy per particle is much greater than in the much larger atoms involved in chemical processes. Going inside the nucleus should also decrease the size of the particle but greatly increase the amount of energy available per particle.

4. Systems using some means of bending space and time so as to "pop" from one place to another without having to truly travel along the path between the points. Picture a sheet of paper first flat and then bent so a pair of diagonally opposite corners are bent so as to touch each other. Obviously travel between the corners would then be very much more rapid than if the paper had to be kept flat.

5. Systems that we cannot as yet imagine just as fusion as the primary energy producing process on the sun wasn't determined until 1937, though it had been going on for 5 billion years. Any study of technological progress clearly shows that progress comes from doing things differently in an unpredictable way. The future, technologically speaking, is simply NOT an extrapolation of the past or the present.

An important aspect of the design of any interstellar propulsion system involves taking full advantage of Albert Einstein's relativity postulates. Theory and experiment have both clearly demonstrated that as things having mass such as people, particles and starships, approach the speed of light (c) time slows down for them as compared to those not moving as rapidly. The extent of time's slowing down depends on just how close one approaches the speed of light. For example, a one way trip of 37 light years (the distance from Earth to Zeta 1 or 2 Reticuli) at 99.9% c would take only 20 months crew time. At 99.9% c it would take only 6 months crew time. Thus, even a trip to a galaxy such as Andromeda, 2 million light years away, would only take under 60 years crew time if the intergalactic ship could somehow manage to keep accelerating at 1 G using some as yet unknown technique.

An important point to bear in mind in any discussion of interstellar travel is that it would be done in a systematic fashion. Observations would be made, unmanned craft would be sent, followed by orbiters, the installation of refueling stations, manned craft, colonizers, travellers, and the rest. It took only 12 years but more than \$25 billion from the launch of the first small satellite to a manned landing on the moon. Considering that there are stars in our local neighborhood that are billions of years older than the sun, it would not be surprising if interstellar travel has been commonplace for billions of years. Several published papers have concluded that our Milky Way galaxy has already been colonized. Furthermore, it must be noted that travel between two star systems is more likely to occur the closer one system is to the other. Zeta 1 and Zeta 2 Reticuli are both sun-like stars but are less than 3 light weeks apart. Observers on a planet around one could easily observe planets around the other. One would certainly ex-



pect interstellar travel earlier there than in our isolated corner of the neighborhood where the nearest star is 100 time further away than it is for the Zeta Reticulans.

SUMMARY

Experience tells us that it would be extraordinarily unlikely that we could duplicate the propulsion systems of either EEMs or mother ships given our very short--on a cosmic time scale--history of technological development. Thomas Edison couldn't have duplicated an atomic bomb or a \$5.00 pocket calculator 40 years ago even if given the plans and being shown them in operation. Technological developments of the last quarter century should also tell us that EEM and mother ship technology are not in violation of the laws of physics and should be studied for clues about tomorrow's technology. The data indicate the governments of the world are doing Just that.

TABLE 1

Velocity as a function of time when accelerating at 1G (32.17 feet per second per second = 9.807 m per second per second =21.9 miles per hour per sec.)

| <u>Time</u> | <u>Velocity</u> |
|-------------|-----------------------|
| 0 | 0 |
| 1 second | 21.935 miles per hour |
| 1 minute | 1316. m.h |
| 2 minutes | 2632. mph |
| 1 hour | 78,967. mph |
| 1 day | 1,895,208. mph |
| 1 week | 13,266,456. mph |
| 30 days | 56,856,183. mph |
| 300 days | 568,561,830. mph |

Velocity of light in a vacuum is 670,579,200 mph
Average distance from the sun to Pluto 3.57 billion miles (less than 6 light hours)

FIGURE 1

Acceleration Tolerance (Source: NASA Bioastronautics Data Book NASA SP 3006)

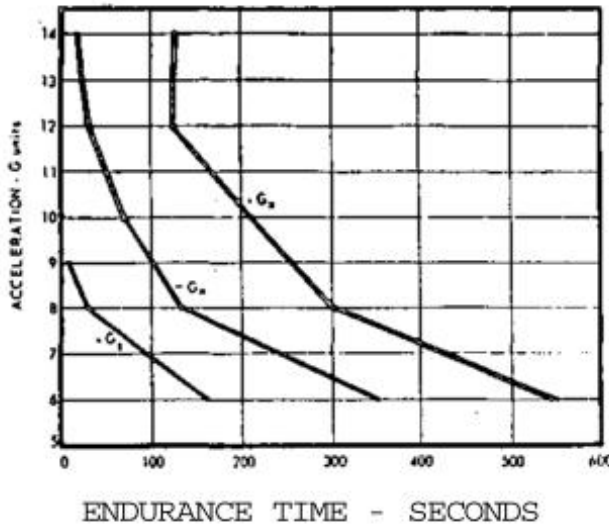


Figure 1A

Upper limits of voluntary endurance (as contrasted with average tolerance, shown below) are plotted for a group of highly motivated test pilots, preconditioned to the effects of acceleration and suitably restrained. The pilots were able to operate satisfactorily a side-arm control device to perform a tracking task throughout the times indicated.

G TOLERANCE IN FOUR VECTORS

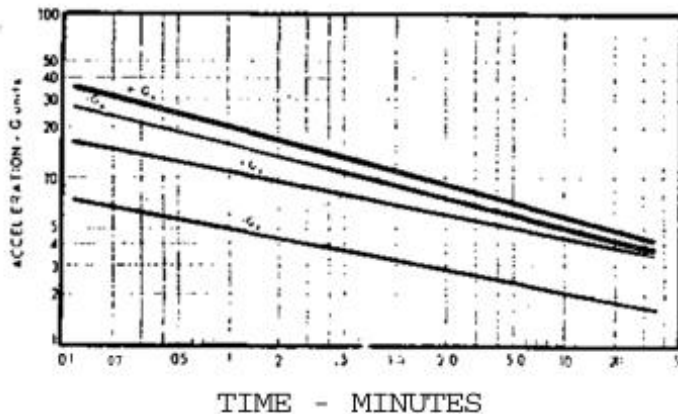


Figure 1B

Average acceleration tolerance is shown for positive acceleration (+G_z), and transverse prone acceleration (-G_x).

RAY STANFORD

Ray Stanford has long been **UFology's** most active proponent and practitioner of instrumented UFO hard-data monitoring and recording. An investigator of UFOs since 1953, Stanford soon realized that UFOs might never be defined within the standards of physical science without reliably recorded, instrumented UFO data, thoroughly studied.

In 1973 he founded Project Starlight International (P.S.I.) as a research division of the Association for the Understanding of Man. The P.S.I. instrumented UFO monitoring work is primarily supported through federally tax-deductible contributions.

Under the direction of Stanford, P.S.I. operates a business office at 3724 Jefferson, Suite 112, Austin, Texas, while maintaining both a permanent UFological observatory outside Austin, and a mobile UFO tracking and monitoring van (4-wheel drive). The Project also operates a local UFO hotline (512)458-2031, hoping to learn of sightings that might correlate with its own UFO trackings.

P.S.I. is a professional organization, providing employment for a staff of four, plus volunteer work for up to fifteen other persons when the permanent UFO observatory is in full operation, such as in UFO 'flap' periods. Among the Project's equipment are radar, a broad range of optical equipment, including a spectrographic camera, high quality sound recording equipment, a coupled telescope-laser-photomultiplier-video system for UFO light pulse and light bend studies, synchronized camera systems, automatic recording magnetometers, a gravimeter, and, in the development stage, a computer-centered tracking and data-management system, etc.

On December 12, 1977, the Project began to get results that may prove not only significant, but even definitive concerning the physics of UFOs.

Ray Stanford was born on June 21, 1938, in Robstown, Texas. He grew up in Corpus Christi. He and his wife of seven and a half years, Kitty-bo, have a daughter, Sharilynn, age two. He is also a state section director for MUFON. Mr. Stanford receives mail at P.O. Box 5310, Austin, Texas 78763.

- Photo Credit: NEW REALITIES Magazine



**INSTRUMENTED SENSING, RECORDING, AND DOCUMENTATION OF
TRANSIENT PHENOMENA IN UFO EVENTS**

RAY STANFORD © 1980 Project Starlight International

ABSTRACT

In this paper we shall examine specific instances of instrumentally monitored and recorded transient phenomena in UFO events. Study of the recorded effects shall be taken as a possible 'window' into understanding something of the physics of the phenomena and/or objects.

Both new methodologies and modification of existing techniques will be recommended on the basis of actual experience in the field.

* * *

Events over the past thirty months have reinforced the idea that a solution to the UFO enigma might be facilitated by analysis of data from instrumented records made during events wherein experienced human observers witness aerial or grounded objects or phenomena which, according to their judgment, cannot be explained as having a prosaic nature.

During analysis of instrumented records from UFO events obtained by Project Starlight International's (P.S.I.'s) personnel and equipment, hitherto unsuspected transient or short-duration phenomena have been found. The repetition, regularity and pattering of the transient effects analyzed suggest a reliability in these data, and these effects may convey information about the nature of UFO events.

In addition to preliminary definition of specific physical aspects of UFOs, these records of transient phenomena suggest modification of methodology and/or design in specific systems of instruments which P.S.I. uses in the field. Thus, it is also the purpose of the paper to describe some modifications in instrument design and field technique.

Also let it be understood that this paper as published shall probably be modified, both as to informational content and as to illustrations, in the final version to be read at the 1980 MUFON symposium.

In the first broad category of recorded transient phenomena in UFO events, the author will refer extensively to a Super 8 mm motion picture film taken by himself using an Elmo 104 camera. Film in the Elmo was Ektachrome type G, with an approximate 2,800 frames remaining to be used during the UFO event. The camera lens was at 34 mm when at full telephoto and at 8.5 mm when at full wide angle; film speed was 24

frames per second, and the light meter needle was pegging its limit at f22. The UFO event began at a time originally estimated as 3:26 P.M., C.S.T., and later re-evaluated as having more likely begun at about 3:28 P.M. Although the filming, itself, lasted just under two minutes (until all film was expended), the total UFO observation time was approximately 5 to 5.5 minutes. The filmed event occurred aboard Braniff flight #9, LaGuardia to Dallas-Ft. Worth International, on Monday, December 12, 1977, aboard a Boeing 727, from window seat 8A. The author's wife, Kitty-bo, witnessed the greatest part of the event through another window, by leaning across the tops of seats in row 7. This was possible because the tubular UFO was at only a small angular elevation above the horizon and the seats were in front of the wing. (They were unoccupied, but a stewardess had piled coats in them.) She, thus, watched the event out a window adjacent to seat 7A.

As indication of the situation of the aircraft, Braniff reports that at 3:26 P.M. the aircraft was about 70 nautical miles WSW of Memphis, Tennessee (bearing 244° on flight path J42), traveling 458 nautical miles per hour, technical air speed, or 407 nautical miles per hour, ground speed, or Mach 0.8, and at 39,000 feet. The ground was virtually covered with clouds, as viewed from window 8A - a few small breaks in the clouds beneath could be seen occasionally. The aircraft was sparsely occupied, probably due to the day (Monday) and early afternoon flight departure from LaGuardia.

When the UFO event began, the author's attention was caught by view of a rather black-looking sphere (except where the sun, at the upper right, was glaring off the UFO's upper right side). The object subtended about 4 to 5 minutes of arc. The sphere seemed to have a dome on top, and, maybe, on the bottom, also. Its angular speed was surprising because, obviously distant, it was passing the airliner rather rapidly, while travelling on a course that seemed only a few degrees more westerly than the aircraft's.

The object's angular speed in passing the airliner was sufficiently great that the author doubted he would be able to get the movie camera out of a briefcase beneath a seat and film the UFO before it would, he thought, pass in front of the airliner. Fortunately, just as the camera was almost out of the briefcase, the UFO seemed to instantly slow its speed. (One wishes all UFOs were so obliging!) Filming commenced. With gratification the author noticed via the see-through-the-lens-viewfinder that he could definitely see the dark object and the brighter crescent of sunlight reflecting off its upper right. Those details, he realized, would resolve on the film.

After some seconds of filming, the domed sphere suddenly disappeared from view, causing the author to raise his eyes above the camera to see if it had suddenly dashed out of the field of camera view. What caught his attention in the sky, about a small finger's width (at arm's length) above where the dark UFO seemed to have disappeared, made him unconcerned about finding the relatively small thing he had been filming.

There, on a later-computed magnetic azimuth of perhaps 221.5° , was seen a relatively gigantic, apparently glowing, iridescent, tubular thing, with perhaps a very slight metallic luster, which varied in the angle it subtended, from 90 minutes of arc (1.5°), down to about 30 minutes (the angular size of the sun or moon) depending upon the time in the observation. Both the author and his wife somehow received the impression that the tubular thing was oriented about 40° - 45° off the visual plane. They could clearly see that its tilt (as viewed from their position) relative to the horizon was, on the average and as measured on the film, 12° to 13° . The left end was uppermost, until it rotated around its center, as will be described later.

Twice during the filming, both the author and his wife saw a glowing "scroll" of luminous substance separate at high speed from the surface, condense to become a mass of glowing gas, and shoot off at very high speed to the right, at about a 10° to 15° angle to the long axis of the object. This is visible on the film also.

The large, bright object was filmed just under two minutes. As the film was running out, the bright tubular thing began to rotate around its midpoint, like some gigantic, glowing compass needle starting to revolve in the sky.

During the rotation maneuver, the tubular object retained the same tilt relative to the horizon; and when the rotation was complete, it seemed to have revolved about 130° . Now, the lower end seemed to be in the observers' general direction but pointed, still, downward from horizontal by about 12° to 13° - maybe even more.

Once pointing toward the observers, the light quality of the tubular object changed radically. From the end view, instead of being very, very brilliant and even iridescent, it seemed by comparison a dull whitish, maybe even with a very slight grey or dull metallic tint. The edge quality changed with the maneuver also. In the new position, the edges, instead of being diffuse-looking, were darker, crisp, and even surprisingly well-defined. The gigantic tubular object seemed to hover in the new orientation for a while. Then it began what the author saw as a perfectly vertical ascent at slow angular velocity. His wife felt there was a slight tilt, off from vertical, in the ascent.

Out of film, the author tried to get the three stewardesses to go to a window and see the UFO, while his wife continued to observe the object. They looked at him as if he were trying to distract them and hijack the airliner. No stewardess moved toward the window. About the time of the author's second or third plea, the author's wife exclaimed with excitement, "It's gone!" The UFO had suddenly vanished at just the moment when its edges seemed to flash with a diffuse light.

Some weeks later one of the three stewardesses told a stewardess acquaintance of the author that, "We weren't about to go to the window. That guy's eyes were big as silver dollars, and his wife looked bug-eyed, too. We didn't know what they were doing!"

So, at least, we have a study of the appearance of the eyes of persons who are seeing or have just seen a very large UFO! But, seriously, the film turned out to be very valuable in the study of highly transient UFO phenomena, although over-exposed perhaps one f-stop because the aperture of the Elmo does not close down below f22.

A tape-recorded account of the sighting was made the morning after, at the P.S.I. offices, and this was witnessed by several persons including physicist Daniel Harris, Ph.D., who signed the author's drawings made during the account as a witness to the drawings and to certify that the account was given before the film was ever processed.

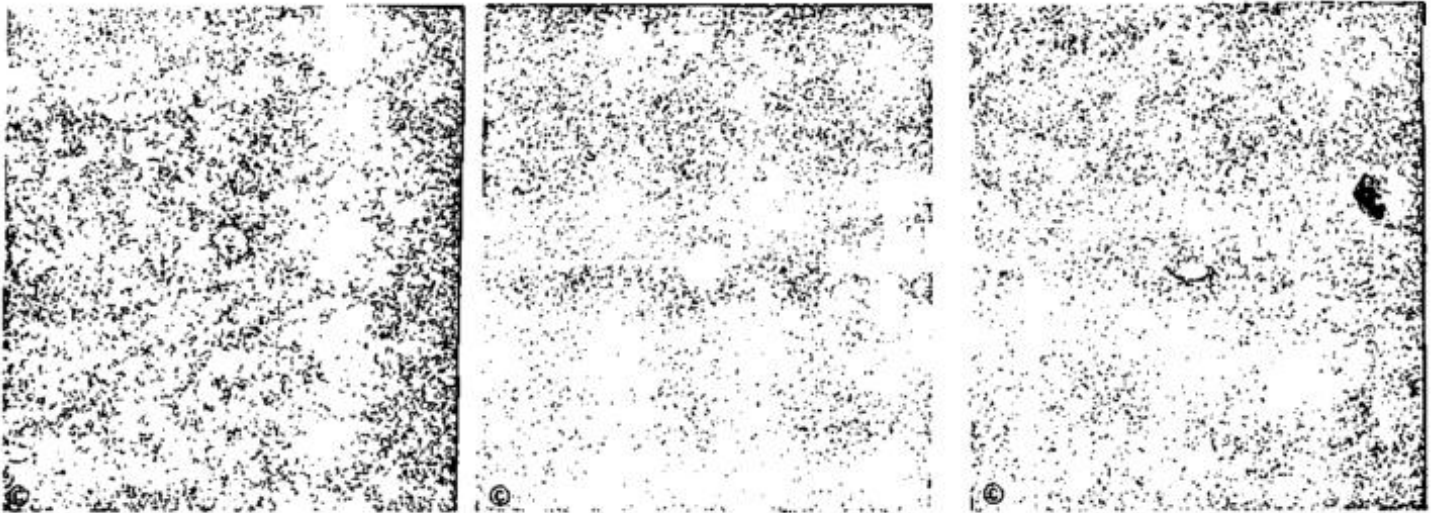
Then the film processing was documented by the author and a 'disinterested' person signing their names (while at the processing plant) into the emulsion on one end of the movie film (cassette type) before it was processed. This signing was video taped, as was the placing of the cassette into the take-up mechanism of the processing machine and the film's coming out, being held up to show the names, etc. The processing was done, in fact, in presence of several witnesses unassociated with the author or the Project.

The discussion of data in the 12/12/77 film as contained in this paper, is far from exhaustive of the film's contents. This paper's scope of study should be viewed as only very introductory in nature. Other papers hopefully, can follow.

In this paper, henceforward, the author shall refer to himself in the third person, or as 'the photographer' etc., preferring the impersonal style of presentation.

Thus, the first broad category of recorded transient effects to be discussed can be generally classified as optical in character:

(1-OP) Some UFOs emit light flash effects (documented in daylight and nocturnal UFOs) of relatively high intensity but of so short a duration as to fall below the visual-perceptual threshold of humans and, at times, near the limits thereof. Thus, while an object is clearly visible, pulsed light emission can occur of such short duration as to be unnoticed by human observers. In two cases wherein a visible, daylight UFO was clearly seen, unseen flashes apparently saturated or near-saturated the image in a majority of frames. Such phenomena can affect the human nervous system. In one case wherein the surfaces of two UFOs flashed at about twenty times per second, one of the P.S.I. personnel with a high visual-perceptual threshold experienced difficulty in focusing his eyes upon the objects and felt almost dazed while looking at them.



PHOTOS OP-1 left to right: (A) shows spherical UFO with sunlight reflecting off upper right. Note sun glare on aircraft window. (B) shows sphere apparently covered by plasma in below-visual threshold flash over entire surface. (C) shows sunlight on upper right of sphere (Note light and dark bands visible in sunlit portion.) during ascent, with what appears to be plasma downflow, beneath, resembling a white tornado. 12/12/77

* * *

(2-OP) Light-flash effects have also been documented which are of a duration sufficient to be misperceived as continuous. Photo (OP-2) is an example, taken on Tri-X film, 300 mm telephoto, f4, wherein the flash rate was approximately 30 times per second, but the UFO was perceived as a steady light source. P.S.I. has other examples of this phenomenon, recorded on color film.

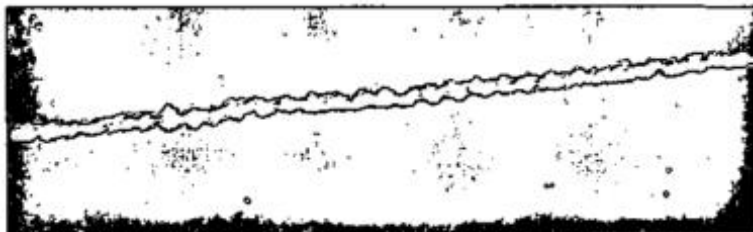


PHOTO OP-2: Section of 35 mm time exposure, of 11/11/74, spherical UFO with light pulse approximately 30 per second. Glow appeared steady to all observers.

(3-OP) The next category of transient phenomena are glowing, columnar (possibly collimated) emissions of iridescent appearance and of durations ranging from roughly 1/6 second (four motion picture frames at 24 frames per second) down to approximately 1/24 second (one frame, including pull-down time, for conservatism in the calculation) as computed from the 12/12/77 film. The emissions display

little or no divergence with distance from the object and tend to remain columnar. Such emissions have a propagation rate which on occasion substantially exceeds a calculated 636 miles per second or 2,289,600 miles per hour (only about 1/292 the speed of light), based on study of images in frames #1460 and #1461, coupled with other data. Study of some other frame sequences provides a higher figure, but the quoted figure is chosen as an example because of the good image quality in those frames. Also some examples of lower propagation rates have been found.



PHOTO OP-3: Positive (top) and negative (bottom) prints (unenhanced but photographed off video screen projection of original frame). This enlargement shows columnar emission as it begins issuing from glowing tubular object, over 100 miles from airliner, 12/12/77.

(4-OP) Just prior to each emission of a glowing column, a growing, increasingly brilliant mass of glowing matter (thought possibly to be plasma or electrified gas) is formed near the end of the cylindrical object from which the emission described in the former paragraph is shortly to occur. This phenomenon builds up at a rate which is so great that it is not easily visible unless a motion-picture film of such effects is slightly slowed down by, say, 25% or, from a filmed speed of 24 frames per second to a projection speed of 18 frames per second. From study of such films there is good reason to suspect that this accumulated mass of glowing gas or plasma is somehow then projected at high speed off the emitting object. It seemingly becomes a rapidly propagating, glowing, column extending away from the object, usually, but not invariably, in line with the object's long axis.

(5-OP) As best as can be calculated from a film recorded at only 24 frames per second, at the very moment when the glowing mass described in item (4-OP) seems to collapse into a projecting column, another remarkable phenomenon occurs: beginning at a diameter averaging about three times that of the now-collapsing sphere or mass of light, and continuing inward, a **darker-than-background** disc (in actuality probably a sphere), of relative darkness, appears on one frame of the film (at 24 frames per second). By the next frame the relatively dark disc (or sphere) seems to have compressed into an expanding wave (visible as an expanding ring) of relative darkness. In frames thereafter, until the resolution limit of the film is reached, the dark ring seems to propagate outward at the speed of sound, becoming of a more diffuse character in the process. Daniel H. Harris, Ph.D., a physicist who has studied a P.S.I. film record (12/12/77) of these phenomena repeatedly

occurring, states that the filmed effect "is likely a shock phenomenon and, then, an expanding **shock wave**", made 'visible' to the film due to both the filming conditions (such as proper backlighting and polarization bias) and the high kinetic energy, and, hence, atmospheric compression and attendant refractive index differential between the shock wave and the ambient atmosphere acting upon light reaching the camera from behind the object.

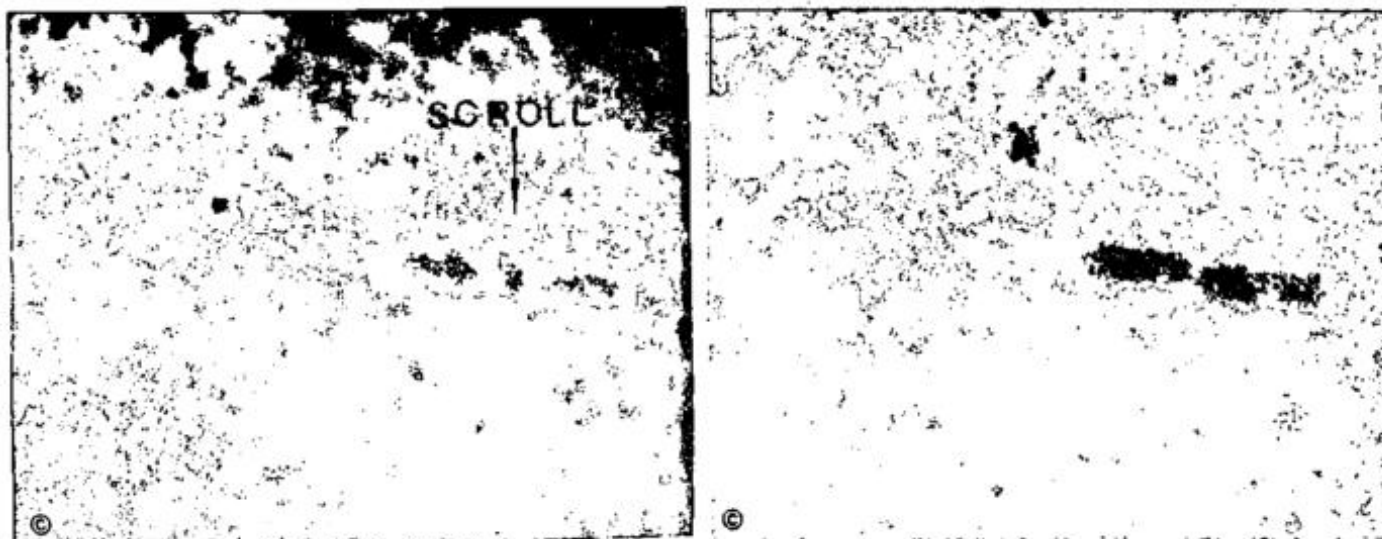


OP-5; A, B, & C, left to right: A is not contrast enhanced, but B and C are, by computer. In A, the bright 'sphere' of plasma seems to have built up to its natural limit and the dark border thereof suggests it has begun collapsing into a plasma beam (to left). In B, the plasma sphere's collapse is virtually complete, with seeming attendant atmospheric shock sphere (dark area encompassing object), and possible plasma 'scroll' is jarred loose from top of tubular object (also noticed by observers). In C, the tubular object seems to re-brighten after emission (to left). Now, the apparent shock sphere has formed what seems to be an expanding, spherical shock wave which, then, propagates at the speed of sound.

(6-OP) A dark band, located generally in the middle of the glowing, tubular objects of the type just discussed, is documented to change its location relative to the long axis of the luminous object. Also, the dark band can vary its orientation as much as 40° - 45° either side of vertical (relative to the long axis of the object). See above. Since this band was not noticed visually, but was recorded by filming through a beamsplitter which tends to eliminate vertically polarized light, this and other data have led physicist Harris to suggest that light from the object may be polarized predominantly in a vertical plane.

A dark band phenomenon has been visually observed in some cases of seemingly glowing tubular objects, but in those cases the bands were usually multiple and not singular, as here. P.S.I. has in its files one other UFO motion picture film (taken by P.S.I.) exhibiting the phenomenon, and, additionally, photos from three other sources, which show the band in association with an identical or similar object.

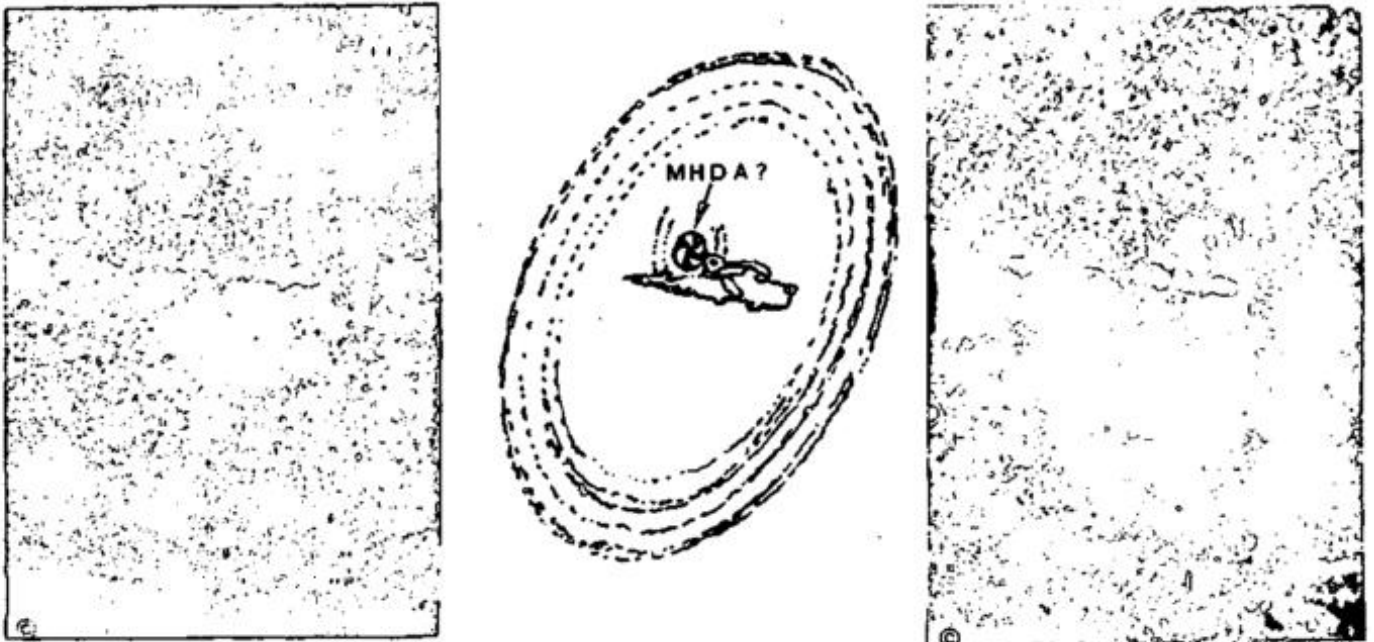
(7-OP) At the moment of transformation of the accumulated luminous mass near either end of the tubular object into a glowing, rapidly propagating column, the glowing gas or plasma around the tubular object seems to become highly turbulent. In the illustrations below, enlarged from figures (OP-5, B & C), we see two adjacent frames in which the contrast in stability - note contrast in edge quality - of the light-emitting eras is clearly evident.



PHOTOS OP-7, A & B: Negative prints are used to better show plasma density or brightness (darkness in negative) and turbulence contrast along tubular object 'edges'. 'Scroll' is in photo B, also, but is difficult to see due to seeming interaction with apparent shock wave (whitish here in negative print). Notice seeming shock wave's effect upon light emitting from the mid-section of the right half of tubular object in B.

Both 12/12/77 observers noticed the dark "scroll" with bright borders [See photo OP-7, A.] of gas or plasma which separated at high speed, seemed to draw itself into a glowing mass, and shoot off to the right along a path estimated as 10° to 15° above the object's axis. That phenomenon, which was seen to occur twice during the 5 to 5.5 minute event, was so fast that the author's wife asked him, both times, if he had seen what she did. It twice is recorded on the motion-picture film of the event. The separation of the "scroll" is correlated, on both occasions, with a jagged edge quality, suggestive of rapid relocation or displacement in glowing gas or plasma on, or comprising, the tubular object's 'surface'. Immediately thereafter, the emission of the glowing, propagating tube of gas or plasma begins. However, emission of the glowing tube, exhaust, or whatever, is not invariably preceded by separation of a "scroll", as it is by evidence of a glowing sphere of gas near the end where action is to occur. The 'scroll' phenomenon gives the impression of being happenstance or even accidental -- unlike the other phenomena.

(8-OP) Frequently in the 12/12/77 film what appear to be subtle, concentric rings of lightness and darkness appear, seemingly centered around the axis of the **tubular** object. One example of these is shown in the frame below, which is an expanded view of frame (OP-7, A). The frame is contrast enhanced, slightly, by computerized image processing; but this and the **other** examples of this phenomenon can be seen, without **enhancement**, on the original 12/12/77 film.



OP-8: Rings due to Faraday rotation are by nature subtle, as are the concentric rings recorded here. (a) is printed in negative; (b), in positive. The central drawing is for those who have difficulty, at first, in seeing the subtle, concentric rings.

Numerous other examples of the concentric ring phenomenon -- even some when the tubular object is of very small image size on the film due to the camera having been zoomed back to wide angle (then, they are, of course, proportionately smaller) -- could be illustrated herein, if space permitted.

It is interesting to notice the enlargement of photo(s) (OP-8). next page. The little oval image (arrow) shows a darker (in positive print, lighter in the negative) curve-limbed swastika-like pattern remarkably like the **magnetohydrodynamic** flow patterns illustrated by Petit (Petit, Poher, and Viton, 1976) for a disc-shaped magnetohydrodynamic aerodyne (**MHDA**). The oval also shows its own set of concentric rings to either side of it (they seem somehow to have distortion at the top). Notice that the **rings'** ellipticity coincides precisely with that of the little oval image or object. This fact is highly compatible with an explanation that the little oval image is a disc-type **MHDA**, and that its concentric rings are visible **due** to Faraday rotation (explained in paragraphs to follow). The oval with seeming **MHDA** flow pattern is visible in a series of adjacent frames, to be published where circumstances permit, as will frame series with other objects showing the concentric ring effect.



OP-8, ENLARGED: Small object marked "MHDA?" is discussed earlier in the text. In the large concentric rings around the tubular object, there is an illusion due to brightness toward top of photo, causing one to tend to see axis of the large rings as below the tube. Careful measurement of first-generation prints prove the rings are centered around large object.

Whatever phenomenon produces this filmed effect of seemingly concentric rings, its duration around the large tubular object is normally never more than the approximate 1/40 second exposure of a single frame at 24 frames per second, for it appears on single (non-successive) frames only, but at numerous places in the film. Around the smaller (and possibly closer) objects, it is visible in successive frames. Only with higher speed filming could the possible lower limit of duration of the effect have been defined more definitely. Desiring to better resolve UFO events, the Project now records them with a movie camera capable of faster shutter speeds in order to obtain better resolution and definition. The tubular object

gave both the author and his wife the impression of having been tilted about 40° to 45° from the visual plane and about 12° - 13° relative to the horizon. Thus it is interesting that the seemingly concentric rings appear as ellipses of about 45° to 50° , just **as** if they were views of concentric circles centered around the longitudinal axis of the object but viewed 45° to 50° off the apparent plane defined by the rings.

It may also be important to note that the rings occur only, so far as the author has determined during twenty-eight months of work with this 2,800 frame film, in the very frames where the built-up glowing mass [see item OP-4] seems to be pushed or accelerated into a rapidly propagating tube of light. Also, that is when the surface gas or plasma shows jagged 'surfaces' or edge quality. The aforementioned physicist, Daniel Harris, has studied the film and suggests **that** - since the film was taken with **polarization** bias (via the aircraft window which formed a Brewster angle to the objects being filmed and via the beam-splitter), the rings could be due to "Faraday rotation", which occurs when the plane of polarization of light (in this case light from behind the object) rotates while passing through an atmosphere permeated by a magnetic field. The proposed explanation for the existence of peri-UFO rings is the same as that offered by Dr. James A. Harder (Harder, 1968) to explain three concentric rings observed around a UFO as seen through Polaroid sunglasses by Wells Allen Webb on May 5, 1953. The rings were not visible **when** the object was viewed without the sunglasses.

The author believes that all physicists will agree that caution must be exercised in making any final attribution of cause for the photographed rings. They might conceivably be due to some effect not heretofore considered. **Yet**, in possible support of the Faraday-ring hypothesis, one might point out that the glowing tubular object appears to have properties predictable for a proposed tubular **magnetohydrodynamic** aerodyne by Maurice Viton, a French astronomer, and Jean-Pierre Petit, a French plasma physicist (Petit, **Poher**, Viton, 1976). Such a device would operate with a dipolar magnetic field along the long axis and with electrodes along the surface. It would produce **precisely** such axis-centered, concentric, visible, Faraday rings, if there were an ionization differential across the field of view, and provided the magnetic field were adequate. The great number of rings detectable by careful study of the photo in the accompanying reproduction would not require so great an intensity of magnetic field as one may at first think. That is because the ion state of the atmosphere, which seemingly is very great around the glowing, tubular **object**, is a factor conducive to Faraday rotation in the presence of a magnetic field.

Such a magnetic field might, conceivably, have been pulsed at a rate unsuitable for resolution of Faraday rings by the film until '**frozen**' at a specific intensity and **coincidentally**, long enough for Faraday rings to be photographed. But even that duration was obviously only approximately equal to or less than the 1/40 second frame exposure time. Perhaps the field was '**frozen**' at a specific level only long enough (for efficiency) for the seeming plasma sphere to

build up to the limit of stability, then to **disintegrate**, and then to be '**pushed**', **magnetically**, out the magnetic field '**orifice**'. Notice that, in the very next frame, the '**edge quality**' or surface quality has become remarkably even and the rings, **too**, are no longer seen. [See photo OP-7, **B.**] Of **course**, this is ad hoc speculation and should be considered as a basis for planning future research, rather than as a conclusion.

It is conceivable that, once outside the stronger '**push**' of the magnetic field, the plasma, already accelerated, might naturally propagate in an organized way, along the residual '**ion tube**' of earlier pulses. This does not explain the mechanism of just how the '**first**' plasma column would have propagated so smoothly and orderly as to provide an electrified, **path-of-least-resistance** '**conduit**' for subsequent emissions. Yet, one can postulate some type of laser '**conduit**', perhaps invisible from the side, due to its coherent **light**. Or, such a conduit need not necessarily be composed of visible light or even **light, per se**. This, **too**, is ad hoc speculation and is mentioned only to suggest areas of future research.

Whatever the correct explanation of the concentric ring phenomenon, as well as that of the columnar emissions, the proper interpretations may eventually prove very valuable in understanding high energy **physics** found to be involved in UFO effects. The phenomenon appears often in the 12/12/77 film.

(9-OP) Other transient effects which occur regularly in the 12/12/77 film are changing but repetitive colors of the glowing gases or plasma(s) across the tubular object's surface. Frequently, but not invariably, the colors - primarily blue, pink and iridescent white - display **bi-lateral** symmetry in their locations relative to the mobile dark band described in (6-OP).

The color-pattern phenomenon cannot be effectively illustrated here due to lack of color **reproduction**, but it will be illustrated by single frame slides in the formal **presentation**. It should be pointed out that direct **and** persistent color changes recur in correlation with other specific transient phenomena involving the tubular object and its emissions, such as those already discussed.

In reviewing the heretofore discussed photographic data and the techniques involved in gathering them, several methodological **modifications** suggest themselves, although this list shall by no means be exhaustive of the **possibilities**:

(A) Larger film format (either 16 mm or 35 mm) and a finer grained color film (such as **Kodachrome**) should be used when possible. Higher shutter speeds in movies will also yield not only better image quality but better definition in timing of very transient events. Also, more active use should be made of a **P.S.I.** system which couples a video camera, video and other recorders, telescope, and photomulti-

plier system. Recorded output of the photomultiplier could give excellent resolution of flash phenomena.

(B) Since UFO data have been interpreted by Harris as possibly suggesting emission of light that is highly polarized, various techniques should be used not only to increase data gathering capability relative to polarization phenomena, but also to eliminate data loss because of polarization bias in emitted light. A motion-picture camera which does not employ simultaneous filming and through-the-lens viewing would eliminate light loss due to the beam-splitter effect. Simultaneous use of two high-speed cameras with polarization bias, vertical in one and horizontal in the other, might yield valuable results.

If the existence of the concentric ring phenomenon around the tubular UFO and, incidentally, around and coincident with the plane of radial symmetry of other types of daylight UFOs also filmed by P.S.I., is interpreted as being a Faraday rotation effect, simple techniques suggest themselves for resolving the question: The synchronous operation of three single-lens reflex cameras. One would have a polaroid filter over the lens which permits passage of vertically polarized light to the film. Another would employ a filter so as to admit only horizontally polarized light to the film. The remaining camera would use no polarization bias at all. If any concentric ring effect is available from the object being filmed and is indeed due to Faraday rotation, the two cameras with filters should show the ring effect (one or more rings, if the field strength is sufficiently great), while the unfiltered camera should show no ring(s).

The next category of transient phenomena discovered in P.S.I.'s hard-data recordings shall be called interactive, involving UFO interaction with moisture in the atmosphere, with light rays from the sun in casting shadows onto clouds below, etc.

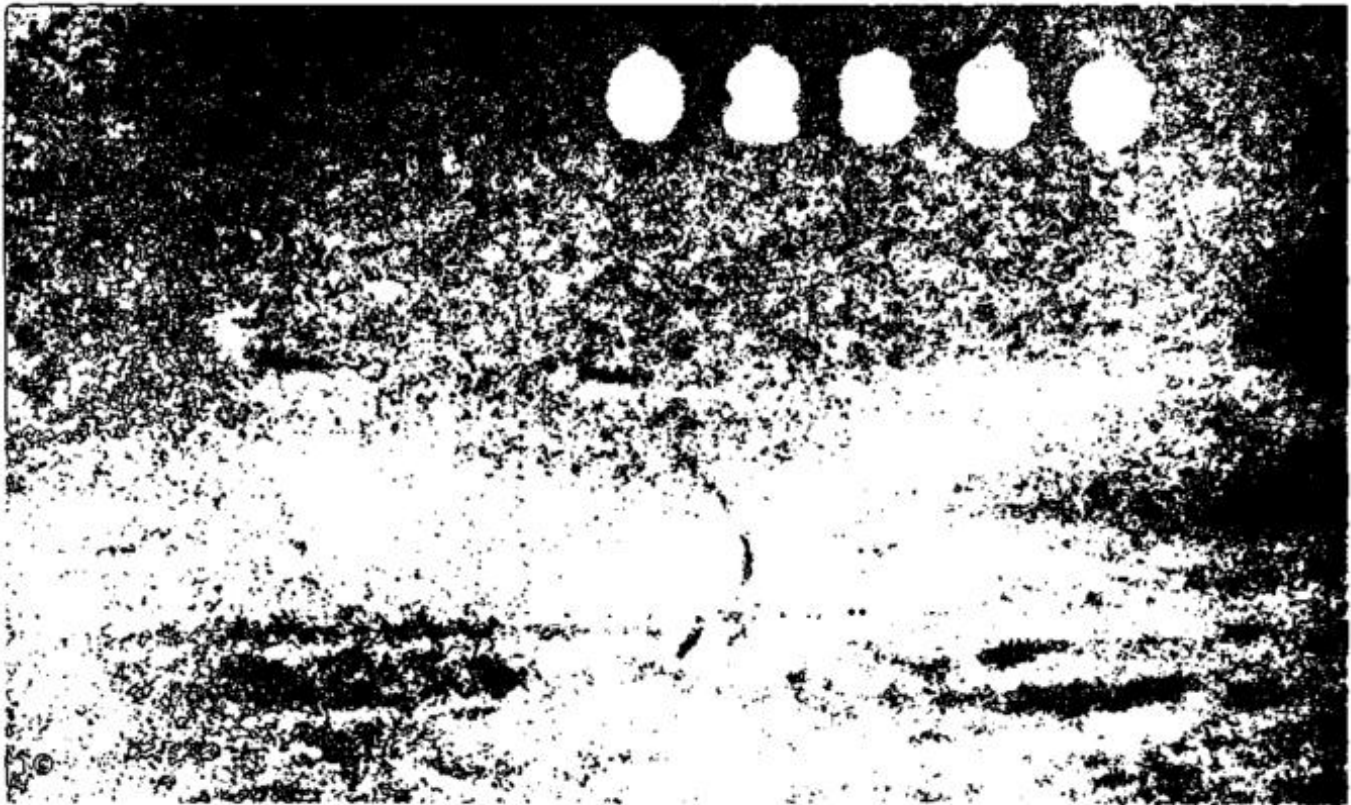
(1-IP) Upon projecting and examining the processed 12/12/77 film, it was noticed that two "cylindrical clouds" appear instantly, although not simultaneously, and that the first frame in which one of the two appears shows it with an iridescent glow, dark central band, etc., an appearance precisely like the object which was much higher, that obviously was a UFO. After about more than a minute of visibility on the 2,800 frame film, a strange event occurs which is so transient as to have been recorded on only one frame (#2559) of the film.

For over a minute the elongated, almost cylindrical "clouds" just look like long clouds except for subtle and very high speed changes visible in frame-by-frame examination. Then, in frame #2559, both "cylindrical clouds" suddenly reveal, for that frame only, dark cylindrical-looking images, with the "cloud vapor" appearing to be compressed to the distal side of and below each dark cylinder, as reproduced here in black and white.

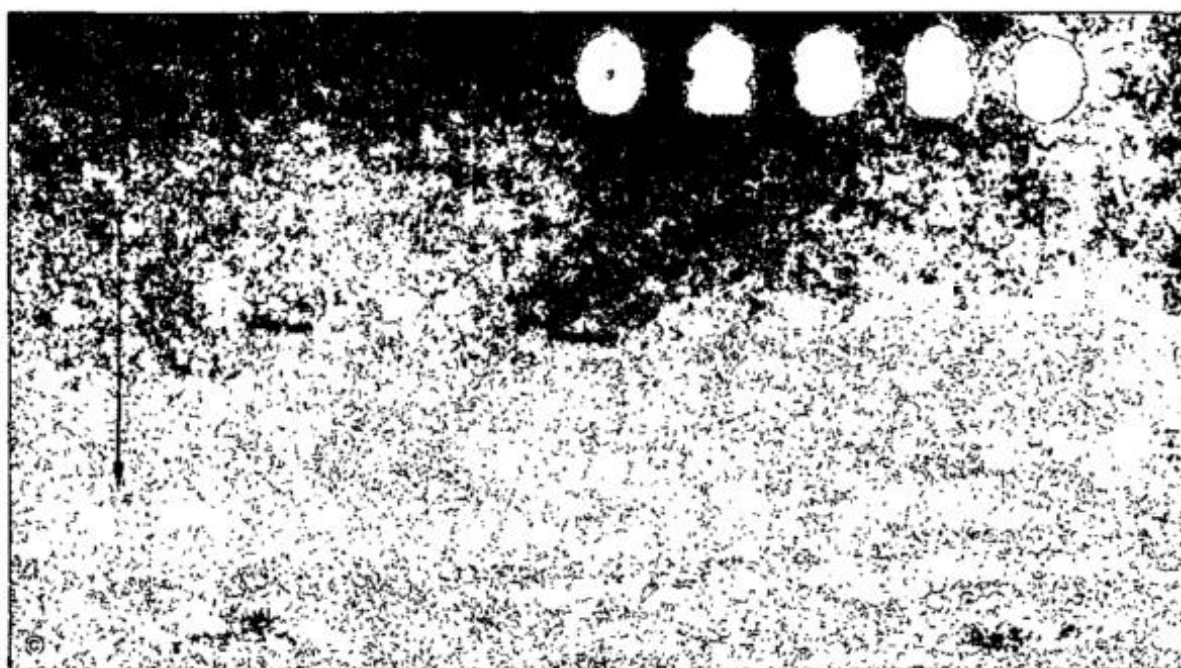
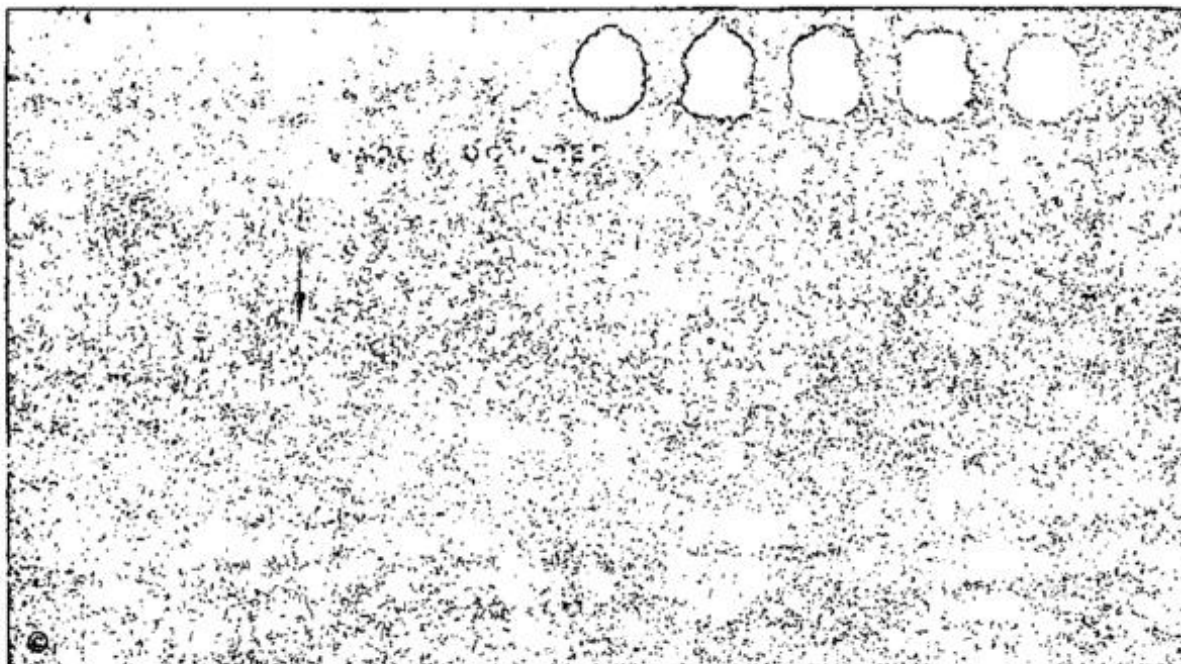
In frame #2559, one readily notices that one of the dark cylinders seems to produce an apparent motion-smear image, just as if it had made a high-speed dive into the lowest cloud layer. And, although it is difficult to see in black and white, the other dark cylinder (left side) produced what seems to be its own motion-smear image, to the right and then upward out of frame. Microscopic examination of the original film definitely suggests that the two dark cylinders, along with their motion-smear images, are real optical images and not artifacts.

Therefore, it does not seem unreasonable to consider that the two 'cylindrical clouds' contained two objects of the same general type as the tubular UFO already illustrated by frame prints. The only difference might have been the involvement of water vapor within the plasma - note their comparative nearness to uppermost cloud tops. This may have dulled their appearance by allowing formation of ionization vapor around the objects.

If something like the Petit-Viton type of cylindrical, magneto-hydrodynamic aerodyne (MHDA) was involved, then according to magneto-hydrodynamic theory, we should expect plasma to accumulate momentarily to one side for propulsive application in speeding laterally away. This explanation is compatible with the filmed images.



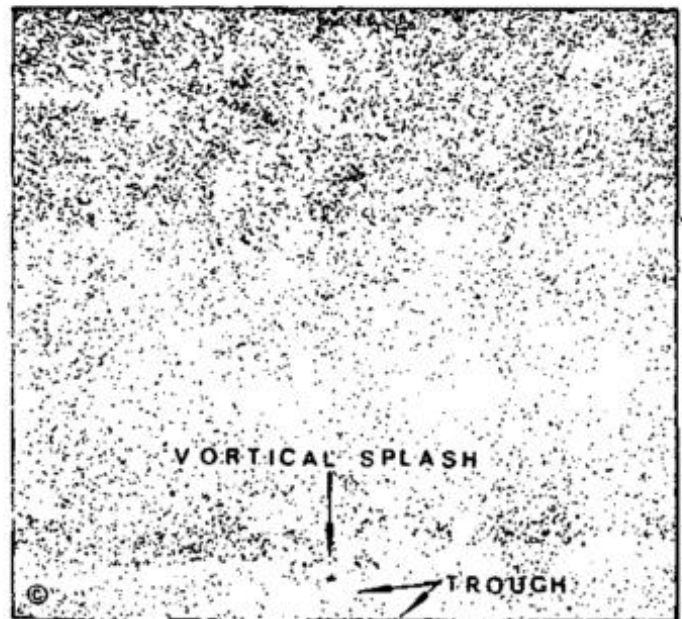
Frame #2559 (1)



Top: IP-1, A (2558)

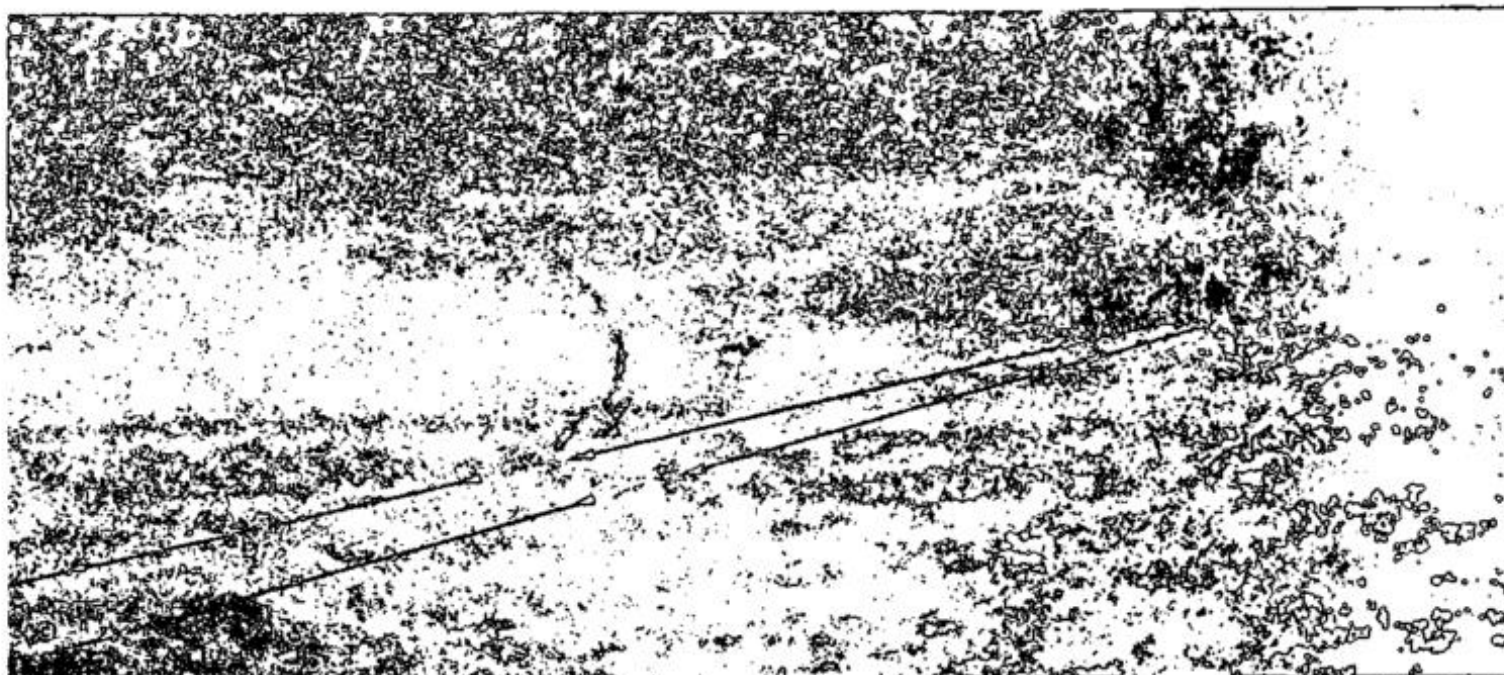
Bottom: IP-1, B (2559)

The most conservative speed estimate for the departing cylinders is several tens of thousands of miles per hour. If, indeed, a physical object should make such a high-speed entry into a cloud layer as is suggested by the possible motion-smear images, then even with MHD propulsion we might expect to see resultant vortical motion in the cloud layer at the point of entry. In the very next six frames, beginning, of course, with #2560, there are effects which can be interpreted as this vortical motion. [See enlargements from frames #2559 and #2560, below.]



In this case, considering the appearance of the motion-smear image and the effect upon the cloud layer, the cylinder would have entered the cloud very rapidly, with the left end having entered last and the right end penetrating the clouds first, while the cylindrical body was tilted at some angle other than level with the cloud-layer surface. Very careful study of frames #2559-#2565 show the possible vortical ring formed in the cloud layer as progressing to the right and slightly forward - just as it should if a low-pressure trough had been formed by the initial entry of the right end and cylindrical body into the clouds. It is the final end of the entering object that should leave a vortical hole in the clouds. The dark spot in the middle of the vortex is possibly due to dry air from above the cloud layer being drawn into the middle of the vortex, due to the object's speed. The dark spot, thus, may well be the ground below the clouds, made visible through the relatively moisture-free air being drawn through the cloud vortex from above.

If further evidence is needed to establish that the "dashing cylinders," as they have come to be called around the P.S.I. offices, are physical objects, then there is more. One can detect what appear to be subtle shadows cast by the sunlight onto the clouds as the cylinder approached the cloud layer. This effect (darker at each of the object's ends) is pointed out in the reproduction on the following page.



FRAME #2559: Apparent **smear-trail** shadow projected by sun across clouds. Lower shadow portion seems to arc very slightly as projected across cloud top. Shadows fall along the inserted lines (between 'arrow heads').

The 'shadow effect' even displays apparent perspective, and imaginary lines drawn along its length converge at a position that is vertically beneath the sun's location, tending to still more strongly suggest that real shadows are involved. If still more evidence of the reality of the transient event is required, return to photo (IP-1, A & B) frames #2558 and #2559. Notice that the dark cylinder on the left seems to have its shadow cast, by the sun, onto the diffuse cloud below and to the left. This 'shadow' is marked for reference in frame #2559. Notice that the distinct 'shadow' is not visible in the preceding frame. A diffuse object does not cast a crisp, dark shadow, but a dark cylinder without obscuring vapor certainly should and, seemingly, does. None of this group of frames is in any way computer enhanced.

One may justifiably wonder what happened to the two cylinders of cloud-like vapor after the two 'dark cylinders' made their high-speed dashes out of them. The answer is not so amazing as the 'mad dashes' of the cylinders; but if one maintains that the 'cloud cylinders' were in fact natural clouds, then both 'clouds' should receive some kind of Olympic gold medals. Why? Because in the course of only thirty (30) frames or 1.25 seconds immediately following the dark cylinders' departure, the two 'cloud cylinders' descended to disappear into the tops of the real clouds below them, while real clouds around them just stayed in place. The most conservative calculation of the speed of the descent by two 'cloud cylinders' into the cloud tops is over four hundred (400) miles per hour. Whether or not this remarkable descent could have been due to residual plasma columns having an electric charge which was attracted into the cloud tops (oppositely charged?), the author does not know; but the film definitely shows the event.

The 12/12/77 film also provides us with an example of what certainly seems to be a motion-smear trail passing behind, instead of into (as in #2559) a cloud.

For forty-eight (48) frames leading up to #2462 (seen below), an oval object unnoticed by the photographer (possibly because he was watching a much larger, more spectacular object) moved into a position at the top of the dark, curved streak shown in frame #2462. Then, in the 1/40 second of this exposure, the seemingly light-absorbing object dashed behind a distant cloud. It continued, re-emerged 'beneath,' and curved onward to the right. The speed suggested is very **great**, even almost incredible, but the seemingly light-absorbing object definitely appears to be **there**: it is obscured by the cloud, and there are even dark areas on clouds that some have interpreted as shadows of the motion-smear image.



There is but one honest answer to those who would find such sudden high-speed excursions as found in the 12/12/77 film incredible and would say that, "the accelerations involved would render any machine or its occupants into figurative flapjacks." We should **open-mindedly** examine the phenomena **recorded**, being humbly mindful that the exponential curve of progressing science and technology may soon render today's '**impossibilities**' flatter than the alleged **occupant-turned-flapjacks** projected by the dogmatic nay sayer. An instrumentally recorded phenomenon must not be rejected merely because one does not comprehend how it could occur.

If the concentric ring phenomenon which occurs so frequently in the 12/12/77 film is, indeed, evidence of a strong magnetic field producing extensive Faraday rotation, then the question naturally **arises**, "Why have no directly correlated magnetometer recordings of UFO magnetic **field** effects been obtained?"

The answer is that Project Starlight International (P.S.I.) has obtained two well-documented magnetometer recordings of magnetic effects which, after nearly two years and careful study, have been shown not to have had their sources in geomagnetic **disturbances**, external technologies on the ground (including automobiles and CB radio transmission trigger effects), or within the sensor-recording **instrument**. When the magnetometer data are presented and discussed more fully in future **papers**, a thorough explanation of the methodology used in making these determinations will be discussed. It is a complex matter, but the author will gladly explain to anyone desiring an explanation. One recording of UFO magnetic effects shows possible evidence of correlation with the motion characteristics of daylight UFOs (7/19/78) being tracked visually and with a movie camera while that **recording** was made. The recording of magnetic effects were made using Precision Monitoring Systems (now, Design Technology, Poway, California) Model 100 Automatic Recording Magnetometer with 105 sensor. The magnetometer sensor (**induction** - coil type) was in both cases about 100 feet from the van and in both cases tests were performed to determine that neither motion of van doors nor crew motions with **cameras**, etc. could be picked up by the sensor. Photo (M) shows the magnetometer central unit. The sensor is not shown. IRIG recording is produced on an ordinary tape cassette located within a drawer in the central unit. In field work, the analog graph is produced later, using the recording. At the laboratory, there would have been automatic analog graphing.



* * *

PHOTO M, above **right**: Central unit of magnetometer, beneath video monitor.

The first UFO magnetic-effect recording was made during a daylight - visual sighting of two UFOs making "visually instantaneous" reversals of direction in the sky west of Plains, Texas, near the Texas-New Mexico border on Wednesday, July 19, 1978, from about 5:50 to 5:54 P.M. Mountain Daylight Savings Time. The objects were filmed (movie) as one made a "visually instantaneous" reversal of direction while the other continued onward and magnetometric effects were recorded. The daylight UFO event was covered by a very experienced three-person team operating out of the P.S.I. mobile laboratory van. It is also interesting to note that several times the two UFOs seemed to instantly disappear and to suddenly reappear in another part of the sky.

The second UFO film (super 8 mm via 72 mm telephoto) with simultaneous magnetic-effect recording was taken at a very isolated place at over 7,000 feet elevation atop a mountain west-southwest of Prescott, Arizona, on July 27, 1978. The total event lasted from 6:10 to about 6:31 P.M. Mountain Standard Time (Arizona). The first UFO of this time period, a white sphere moving in a 'high amplitude' sine-wave path, was not filmed: The author lost sight of it while running for the movie camera; then he quickly turned on the magnetometer. It was detecting a clear, wave-form magnetic effect which was continuing when another crew member spotted a UFO moving out of a cloud area toward which the earlier UFO disappeared. A distinct magnetic wave-form was now being recorded and monitored while the author filmed the second UFO hovering -- a long, vaporous tube with a larger, pulsating bulge or globe at the south-most end. The movie shows that after -- and only after -- a polarizing filter is placed over the lens, alternately dark and light concentric rings become periodically visible, centered around the UFO. The rings are sometimes very large and easily visible on the original, unenhanced film. The 'wobbling' dark band effect of the large 12/12/77 UFO is also clearly recorded in the 7/27/78 film, as are other correlated phenomena. The combination of intense, recorded magnetic effects coupled with the distinctly filmed concentric rings -- due, evidently to Faraday rotation, since they are not visible on the 7/27/78 film until the polarizing filter is in place -- suggests very strongly that the UFO emitted an intense, pulsed magnetic field.

An in-depth study must be completed before we can ascribe a 'ball-park' figure to the field strengths involved. In both magnetometric cases, evidence suggests the UFOs tracked were probably over five miles away. Yet, there is substantial intensity to the recorded magnetic fluctuations. For now it is only possible to say that they are impressively strong as detected at the sensor, considering the distance of the UFO field-effect sources. Dipolar magnetic fields drop off in proportion to the inverse cube of the distance from the source; and since present data suggest that dipolar fields were involved, even the inexperienced can see that the 'signals' (by this, communication is not implied) detected at several miles distance, must have been very strong at their sources.

The 7/27/78 IRIG tape recording of the UFO magnetic effect has not as yet been graphed, so busy has P.S.I. been with a wealth of other UFO

hard data. But a portion of the audio output of the recording will be played during the formal presentation.

The magnetometer data from the filmed 7/19/78 daylight UFO event has been graphed, and short portions of it are reproduced on the following two pages. The little marks to the side are spaced at one-second intervals, so it is easy to evaluate the frequencies involved, even though the amplitudes must remain, temporarily, **undetermined**. Note that early in the 7/19/78 event, the magnetometer output is more wave-like in form; later, as the two UFOs were apparently more distant, the effect changes to 1/5 second to 1/10 second 'spikes'. It is interesting to note that these durations compare rather precisely with direction-reversal time in the UFO motion(s), one instance of which is recorded on movie film. The calibration tone, **gravimeter output**, and WWVB (radio transmitted time signal) graphs are marked accordingly. UFOs have often been claimed to produce both magnetic and radio frequency disturbances **simultaneously**. This was certainly the case during the 7/19/78 tracking from which these graphic portions are excerpted, as can be seen by comparing the magnetometer graph with the graph of WWVB radio tracing (square wave but distorted here). Notice that whenever the magnetic effect increases in amplitude, a similar or parallel effect is noticed on the WWVB channel -- an effect compatible with **MHDA** theory. Also be aware in examining the graphs that two identical UFOs were operating **simultaneously**. The recorded effect, thus, may be a composite of two UFO magnetic effects, **simultaneously**.

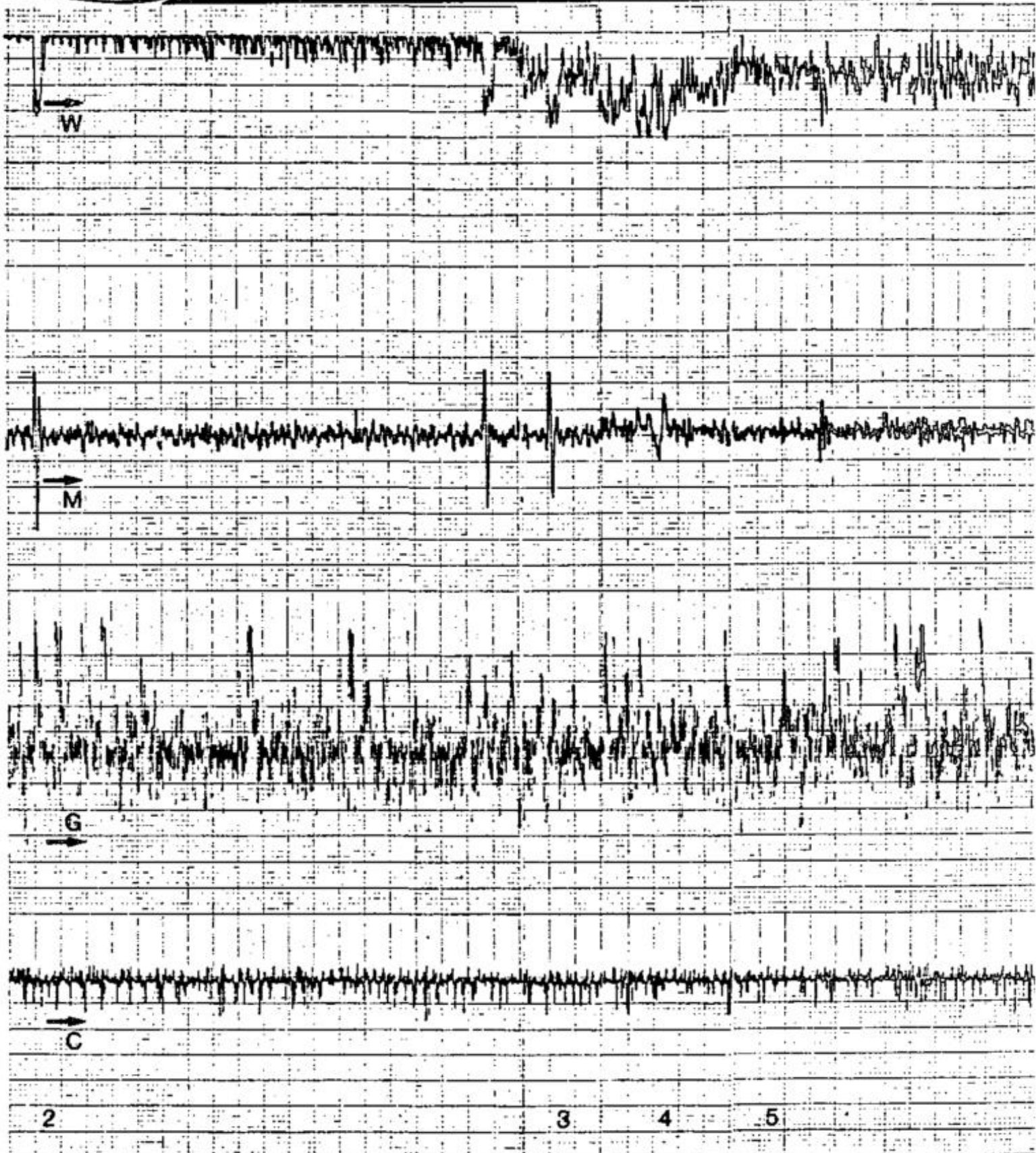
* * *

ANALOG GRAPHS (following two pages): Read the graphs of these simultaneous recordings from left to right; they are graphed at one centimeter per second. At top is the analog display of the WWVB time signal received by radio. This should normally show as a series of 'square waves', but here there is a distorting effect due to proximity of the WWVB antenna to the van (short cable). Notice, however, the correlations in frequency and amplitude between the specific high amplitude, transient distortion in this radio frequency signal and variations in the recorded magnetic field effect charted immediately below the WWVB graph. Such correlations are compatible with **magnetohydrodynamic** (MHD) theory and suggests that MHD action may have been occurring around the two UFOs being monitored simultaneously. Following on the next page, when the UFOs were moving out of the area, the recorded magnetic effects drop gradually down in intensity. Sections 2, 3, 4, and 5 of the graph are sequential, but with sections of the whole-event graph removed, between them (where there were no significant magnetic pulses recorded) to save space. Some of the high-amplitude magnetic disturbances recorded (between those shown on the two separate pages) are not illustrated. They are generally of a character and amplitude similar to the two left-most on the second page. Magnetic effects from passing trucks and cars have been removed from this illustration to save space for the **UFO-related** data. Truck and car disturbances are completely distinct from the effects shown here.

The gravimeter 'wave' is about 27 to 37 Hz (cycles per second) and is discussed in the text. The calibration tone is self-evident.

WWVB
→MAGNETOMETER
→GRAVIMETER
→CALIBRATION TONE
→

1



2

3

4

5

Note the 27 to 37 Hz pattern in the vertical-sensing type gravimeter (Design Technology model 115) output graph. The significance of this is questionable since the sensor was not as well mounted as it normally would be. Yet, it was isolated in an especially padded box, protected from the wind. The author can think of no resonance effect which should have caused the sensor to resonate at 27 to 37 Hz throughout the multi-minute event; and no such effect has ever been recorded at the P.S.I. lab where analog graphing is done directly on a chart recorder -- even when the sensor was being handled. When trucks passed, making clear-cut effects on the magnetometer output, the 27 to 37 Hz effect continues with only a shift to one side of the graph due to the truck shock waves tilting the van in which the sensor was located for protection from wind. The engine and air conditioner were off and no one was inside it. The 27 to 37 Hz effect diminishes slightly but continuously throughout the event as the UFOs move out of visible range. The amplitude of the magnetometer sensor output -- which changes from wave forms to repeated but separated 'spikes' during the passage of the UFOs into the distance -- also drops off, but, seemingly, more steeply than the gravimeter output. If one assumes, merely for sake of argument, that the gravimeter really was picking up the vertical component (it is a vertical sensor, a modified linear servo-accelerometer) of some gravity-like UFO effect, then the ambient effect being detected might be expected to drop off with the inverse square of the distance from the UFOs, in contrast with the inverse cube drop-off for a supposed dipolar magnetic field. One might expect just about what the P.S.I. crew recorded between 5:50 and 5:54 P.M. M.D.S.T., July 19, 1978. But one word of healthy caution: there are so very many potential variables involved that such an analytical exercise can probably never be conclusive (in this case) concerning a gravity-like effect. The 'signal' although very persistent -- so much so that it does not seem likely to be mere 'sensor ring' -- just looks too 'noisy' (jagged) to ever provide good evidence of UFO gravity-like effects. Coupled, hopefully, with future data and maybe even with the 7/27/78 data, once it is graphed, we may be able to make a more significant evaluation. For now, we must be reserved about attributing real significance to the gravimeter effect recorded, even though it is interesting. It is the magnetometer records which have real import. From four years experience in the field with the magnetometer, prior to the July, 1978, successful events -- and several earlier UFO events where no magnetometric data were evidenced, possibly due to the great distance to the objects -- the author can say affirmatively, following extensive comparison of the UFO-related magnetometric taped records against ambient audio tape records of the same July, 1978, UFO events (which include the magnetometer audio output in the background as well), that these experiences and studies, plus tests on the equipment itself and control recordings made at the same UFO event sites, demonstrate that there is a very high level of certainty that UFO magnetic effects have been recorded and well-documented.

No known natural phenomenon can account for either the magnetometric records or for the seemingly technological UFOs filmed and recorded in the July, 1978, events in west Texas and Arizona. No conventional aircraft can produce magnetic fields capable of being detected by the P.S.I. magnetometer more than a few hundred feet away -- much less the several miles each UFO was away, in the recorded cases.

Thus, the author is of the opinion that the legendary "magnetic effect," heretofore only **supported** by anecdotal accounts, is now **instrumentally** documented. Thus, it would seem productive that computer software be devised for studies, involving calibration-tone output to subtract 'noise' from the 'signal,' which correlate gravimeter **output**, magnetometer **output**, and radio-frequency disturbances recorded simultaneously by the sensor systems.

For future application, correlational studies of human reactions, actions, and various aspects of UFO events could be more readily achieved with instrumented data if a separate, but **adjacent**, recording channel were reserved on the magnetometer and gravimeter-output recording tape, for ambient sound input. This is not included as an integrated unit at the present time, in **P.S.I.'s** equipment. But correlations can, with more difficulty, be obtained by comparing our 'ambient sounds' recording, which has magnetometer audio in the background, with the time-correlated, sensor-output recordings.

On the evening of July 19, 1978, between 10:50 and 11:25 P.M., Mountain Daylight Savings Time, five hours after the first daylight UFO filming with magnetometer recording, the **P.S.I. mobile-lab** field crew obtained **two** other new kinds of UFO hard data while **tracking** two UFOs simultaneously. The first known UFO light spectra (faint but readable) were recorded on 35 mm Tri-X film, using a Bausch and Lomb blazed diffraction grating (blaze angle: $16^{\circ}44'$ and 600 grooves per millimeter) over a 35 mm **f2.8** Vivitar lens. Also, the first well-documented UFO sound-effect recording was made with a high-quality directional microphone. Color photos were obtained on 35 mm Ektachrome film, using a 300 mm Rexatar lens. A novel method of calculating UFO size and distance was employed. It was first noticed that the two UFOs seemed only to produce the recorded sound in association with visually instantaneous reversals of direction (180° turns) and 90° turns. Thus, by measuring the time required from the beginning of a turn, for the sound to reach the crew and sensors following a specific UFO maneuver, a distance figure was derived. The speed of **sound** for that altitude is known. The distance during the best sound recording was around 2.7 miles. (Wind was very slight and, **therefore**, not a significant factor in the calculation.) The angular size, as estimated visually and later confirmed on film, was then used to calculate the approximate object size, about twenty feet across **the** greater axis of each oval **object**.

At the time of this writing, only one of the several UFO light spectra has been **microdensitometer** graphed for analysis purposes. Others will be done when equipment is again available. The results will be published in **appropriate journal(s)**. At this early date, it can only be said that the spectra are extremely narrow. The spectra appear to be of the discontinuous type; light from the upper and lower portions of the two UFOs at times appears to be of a single-line nature. In several instances light from what seems to be the UFO '**mid-portion**' is dispersed as a series of separate **lines** (dots of light) of a very narrow-wavelength range, within the very long red and near infra-red wavelengths. Precise wavelength determination must await further

analysis. All the separate 'lines' or dots are of almost equal brightness, as accurately as the eye can tell.

Thus, the recorded UFO light spectra are rather anomalous, to say the least. In absence of additional microdensitometer graphs and because other visual materials are unprepared for presentation at this time, the author mentions these spectra primarily to let it be known that they exist and in hopes of finding more ready access to a microdensitometer and also in hopes of gaining the cooperation and expertise of qualified analysts.

As to the sound produced and recorded, associated with the very fast (visually instantaneous) reversals of direction and 90° turns: It absolutely surprised the P.S.I. crew in sounding precisely like the deep, low-frequency rumble, with subsonic components, depicted during close UFO approaches in the movie "Close Encounters of the Third Kind." Since the author, who was the field crew leader on July 19, 1978, had recently remarked before the other two crew members that, "Spielberg really messed up in allowing that ridiculous 'sustained thunder' with subsonics to represent UFO sound ... UFOs either hum or make deep, organ-chord like sounds, but not that!" he was embarrassed to hear that he was wrong and Spielberg, thanks probably to Hynek's technical advice, was right.

The high-quality microphone used in obtaining the UFO sound recording of 7/19/78, although sensitive, could **not**, of course, handle the very low-frequency components of the sound, which the crew could **feel**, mostly in the abdomen and on the sides of the head. The recorded sound is to be spectrum analyzed.

Soon the P.S.I. sound-recording system will include a special sensor which will enable us to record even the lowest frequencies (subsonics) of UFO sound -- down to direct current (no frequency). There is no substitute for instrumented UFO-effect monitoring in real events to teach the researcher how to upgrade equipment and methodology.

The data presentation and discussion contained in this paper are by no means exhaustive of either the interesting contents of the 12/12/77 film or of the other films and data recordings now obtained by P.S.I.'s efforts.

About two and a half years were taken in a study of the 12/12/77 film and considerable time in studying the 7/19/78 data, before this initial and very preliminary presentation of the data and the suggestions emerging from them.

The author has reached no definite conclusions about the source of UFOs. It is far too early for that. But the recorded data strongly suggest that technology is involved -- and a sophisticated technology at that.

The data and the analysis results to date compel the author to encourage **serious** students of the phenomena of UFOs to orient their efforts toward a realistic working philosophy: If UFOs are physically real, we can instrumentally record them. If we record them, we can realistically study their physical nature. If we objectively study the physical nature of **UFOs**, we may be able more definitively to learn things about them, than had we only collected reports.

Also, let us carefully examine the physical data. It is not inconceivable that in doing so we may make findings which could greatly benefit mankind through basic new understandings of certain physical processes.

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