

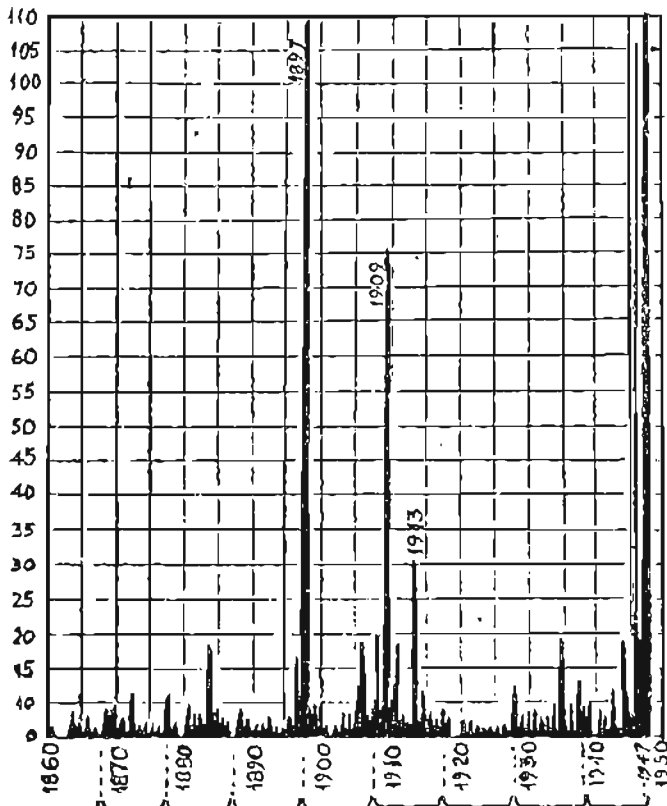


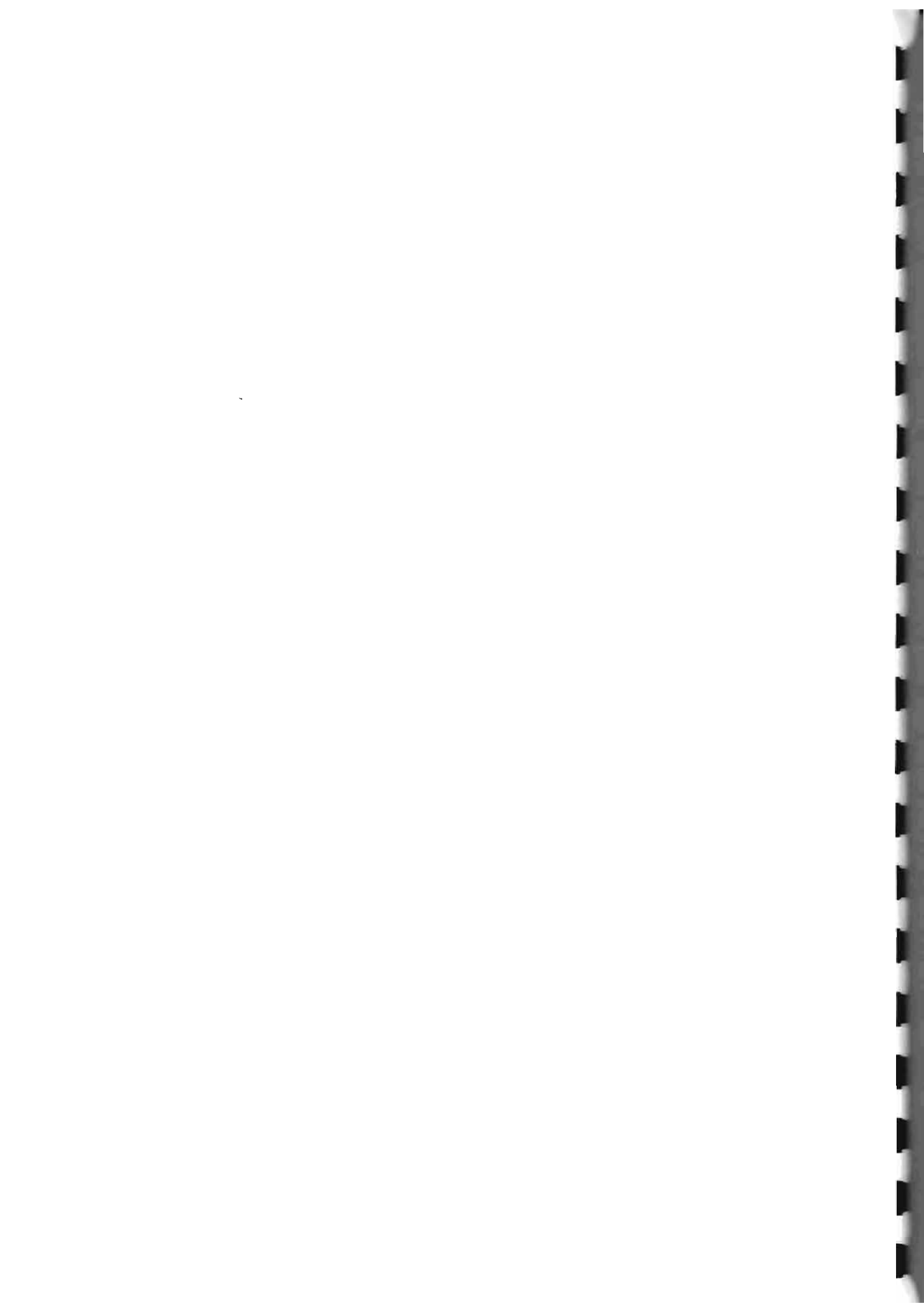
PROCEEDINGS -
SECOND NATIONAL RESEARCH
AND INVESTIGATION
CONFERENCE

BIRMINGHAM 5TH - 7TH NOV. 1976

Edited By

Charles F Lockwood and Anthony R Pace





BRITISH UFO RESEARCH ASSOCIATION
CONFERENCE PROGRAMME - NOVEMBER 5TH 6TH & 7TH 1976

WELCOME TO THE CONFERENCE

We are very pleased to welcome you to BUFORA's 1976 conference. It is our hope that it will follow in the footsteps of last year's function, which was the first full weekend devoted to scientific debate of ufology that this country has known.

The papers to be presented here cover many aspects of our subject, and are based upon the premise that there is a genuine unknown phenomenon to investigate which could lead to an increase in man's scientific understanding.

Some of the aims which this conference hopes to fulfil are:-

1. To act as a signal to the scientific community, the media and the general public that ufology is worthy of serious study.
2. To provide a basis for the development of research ideas.
3. To provide a medium for free-flowing communication and liaison between the serious minded ufologists of this country.

Details of the specific aims of BUFORA, and information about how you might join and help to pursue them, are included in a separate sheet.

BUFORA would like to thank the UFO Studies Information Service (UFO SIS) for their invaluable assistance in the planning and local organisation of this conference. UFO SIS are an independent group which handle UFO investigation in the West Midlands. They are associated with BUFORA and the Northern UFO Network (NUFOA).

Our thanks are especially due to the conference organisers, Roger Stanway, Jenny Randles and Philip Rogers who provided so much administrative help.

THE SPEAKERS AND THEIR SUBJECTS

In general terms the papers to be presented fall into two groups. Those to be given on the Saturday and during Sunday morning deal with specific aspects of UFO research methodology. Those which follow on the Sunday afternoon are principally concerned with the development of hypotheses towards the solution of the UFO enigma.

SATURDAY

PETER ROGERSON

By profession a librarian, Peter is one of this country's better known independent researchers. He has served on the editorial board of MUFJ for several years. This is an independent journal renowned throughout the world for its forthright views, particularly in "new wave" ufology. His interests are chiefly in the psychological and parapsychological aspects of ufology. This paper will review the development of IMCAT which is an international project to catalogue and analyse type one UFO records. A definition of this will be included in the paper, along with the future aims of the project.

JACK WEBBER

Jack is a retired gentleman, who has served BUFORA in several capacities, including the mammoth task of assembling the invaluable membership directory published in 1975. His background includes extensive involvement with the Royal Observer Corps and he is well qualified to discuss the methodology of extracting basic parametric data - such as bearings and elevations - from sighting reports. Here he will illustrate how some vitally important information may be extracted from reports, if properly investigated.

BERNARD DELAIR

Bernard has had a long association with the publishing world and is Secretary of the UK branch of the world UFO organisation CONTACT, as well as editor of their respected journal "Awareness". Contact have done excellent work in cataloguing reports, and have set up a world UFO report catalogue which now runs to several volumes and is comparable in format and content, as well as compatible with, the computer catalogue UFCCAT operated by the Center for UFO studies in the U.S.A. This work has produced some interesting results in analysing the temporal distribution of UFO reports, with the possibilities for the prediction of periodic increases in activity (known as UFO waves,) Bernard's paper summarises this work.

TED BLOECHER

He was founding member of Civilian Saucer Intelligence of New York (CSI NY), January 1954; Staff member for the National Investigations Committee of Aerial Phenomena (Washington, DC) from 1968 to 1969; Author of the book, "Report on the UFO Wave of 1947", privately published in 1967; Edited the "US Air Force Projects Grudge and Blue Book Reports, 1951-1953", published by NICAP in 1968; Co-writer for "UFOs: A New Look" (Chapter VII and other sections), published by SLOW in 1969; Co-editor with Isabel Davis and A.D. Mebane the Books "The Truth About Flying Saucers" (1957) and "Flying Saucers and the Straight-Line Mystery" by Aine Michel, both published by Criterion Press; Writer and Editor with Isabel Davis and A.D. Mebane of The CSI Newsletter, which was published irregularly by CSI of NY from January 1956 through July 1959.

Ted has been a member of MUFON since 1972. He serves as Co-chairman, with David Webb, of MUFON's Humanoid Study Group, formed in 1974. Additionally Ted is the MUFON State Section Director for New York City.

Ted attended Columbia University where he majored in Drama Lit, with a minor in Music. He also attended the Cooper Union Art School and is an accomplished actor-singer with credits too numerous to mention here. Ted resides at 317 East 83rd Street, New York, NY 10028.

DR. J. ALLEN HYNEK

As an exciting addition to the Saturday evening programme BUFORA has received a specially recorded tape from Dr. Hynek, probably the best known and most respected figure in scientific ufology throughout the world. Dr. Hynek served for nearly twenty years as consultant to the U.S. Air Force and has been directly involved in the investigation of virtually all important investigations in the U.S.A. By profession he is a leading Astrophysicist, but his many years of involvement in ufology have seen his attitude alter from outright scepticism to a confirmed belief that there is a phenomenon worthy of study. In 1974 he set up the Center for UFO Studies which now involves many top scientists in the U.S.A. He has published one of the most important books on the subject of ufology, "The UFO Experience". We are indeed honoured to have him present his thoughts on the current state of UFO research.

SUNDAY

ANTHONY PACE

Tony is research director of BUFORA, and has been coordinating work on the Vehicle Interference Project. This is an intensive examination of UFO reports which allegedly involve direct interference with motive power units, principally of vehicles. This work is involving several people highly skilled in the mechanical fields associated with such aspects, and in this paper Tony will summarise some of the avenues of research which they are exploring.

ROBERT DIGBY

Robert is presenting this paper on behalf of his colleagues in the BUFORA Photographic Analysis and Investigation Department (PAID) . This excellent offshoot from the BUFORA research department is the chief base in this country for the analysis of photographic material allegedly related to the UFO phenomenon. He will examine some of the problems related to photographic analysis and illustrate with reference to some of the more important cases on BUFORA's photographic files - including two movie-films currently under intensive research.

TIM O'BRIEN

Tim was formerly a leading figure in the British oil industry, and is a geologist and author of several texts on the structure of the Earth. He has delighted audiences at BUFORA's London lecture programmes with an annual review of his latest research findings, in his search for a "unified hypothesis" to explain the UFO phenomenon. In this paper he intends to tie together all the loose ends and present for the first time in one piece his projected hypothesis to explain this puzzling phenomenon.

MARK STRECHET

Reading Physics at the Royal Holloway College, London, Mark has a specialist interest in Astrophysics and especially plasmoid phenomena. He hopes in this paper to illustrate the close parallels between UFO and ball lightning type phenomena and to extend this to a more detailed hypothesis for the explanation of certain UFO events. He will outline some of his proposals for future research in this field.

ROY DUTTON

Roy is an aeronautical engineer, whose career has included feasibility studies of advanced space vehicles and aerodynamical research. This paper surveys nine years of independent research into the reality or otherwise of some of the stranger reported UFO incidents. Intensive research has enabled him to put forward some tentative suggestions as to the nature of the UFO phenomenon, including a theory of seasonably-variable earth-encounters, which might in the future lead to the direct prediction of UFO events.

IAN GRANT

Twelve years as a meteorologist, followed by seven as a computer programmer, have left Ian now as an independent computer consultant and extremely well versed in logical thought. He believes that we find the UFO problem incomprehensible largely because our ideas are based upon illogical misconceptions. In this paper he intends to present a step by step analysis of the phenomenon - taking as his basis some well documented cases. He closes with some tentative conclusions as to the reasons why the phenomenon manifests as it does - under such headings as: What are UFOs? What are they doing? What is their purpose? What may they do next?

Join BUFORA and help solve the UFO enigma

The BRITISH UFO RESEARCH ASSOCIATION (BUFORA) is an organisation dedicated to the scientific investigation of UFO phenomena. Membership is open to any person with a genuine and non-cultist interest in UFOs, and who supports the aims of the Association. BUFORA publishes a bimonthly journal, various special papers, holds monthly meetings, and sponsors an annual conference. Fuller details are given overleaf.

Aims: To encourage and promote unbiased scientific investigation and research into UFO phenomena. To collect and disseminate evidence and data relating to UFOs. To co-ordinate UFO research on a nationwide scale and to co-operate with people and organisations engaged on similar research in all parts of the World.

Status: BUFORA Limited is a non-profit making incorporated Research Association. Its Memorandum of Association under the Companies Acts prevents any member of its Council from accepting any remuneration other than normal expenses. The Company is limited by guarantee and does not have a share capital. Each member's liability is limited to not more than £1.00 in the event of BUFORA Limited being wound up.

If you are interested in becoming a member please write for details to the membership secretary, Mrs. A. Harcourt, "Berways", Stocking Pelham, Buntingford, Herts. General correspondence should be addressed to the secretary, Miss Betty Wood, 6 Cairn Avenue, London W.5. Tel. No. 01-579-3796.

BRITISH UFO RESEARCH ASSOCIATION

CONFERENCE PROGRAMME - NOVEMBER 5TH 6TH & 7TH 1976

FRIDAY NOVEMBER 5th

9.30p.m. Informal debate on Research Methodology - Introduced
Roger Stanway (Chairman BUFORA) AVON ROOM - 9th FLOOR

SATURDAY NOVEMBER 6th

10.45a.m. Chairman opens Conference

11.00a.m. PETER ROGERSON - "INTCAT - AN INTERNATIONAL
CATALOGUE OF TYPE-1 UFO REPORTS"

11.45a.m. JACK WEBBER - "THE ALPHABET OF UFO REPORTS"

12.30p.m. - 2.30p.m. LUNCH

2.30p.m. GROUP SESSIONS (See separate sheet) Rooms as
indicated on separate sheet

4.00p.m. - 4.30p.m. REFRESHMENTS

4.30p.m. BERNARD DELAIR - "UFO WAVES AND THEIR PREDICTION"

5.15p.m. - 8.00p.m. DINNER

(At 7.00p.m. there will be a gathering of the BUFORA Advisers in the MALVERN SUITE)

8.00p.m. TED BLOECHER - "THE HUMANOIDS - AN ANALYSIS OF
UFO OCCUPANT CASES"

(This will be followed by the presentation of a pre-recorded paper on current research
by DR. J. ALLEN HYNEK) See Appendix

SUNDAY NOVEMBER 7th

9.30a.m. ANTHONY PACE - "THE VEHICLE INTERFERENCE EFFECT"

10.00a.m. ROBERT DIGBY - "THEY SHOOT UFO'S - DON'T THEY?"

11.00a.m. - 11.30a.m. REFRESHMENTS

11.30a.m. TIM O'BRIEN - "A UNIFIED EXTRA-TERRESTRIAL HYPOTHESIS
IN EXPLANATION OF THE UFO PHENOMENON"

12.15p.m. BRAINS TRUST PANEL SESSION WITH THE SPEAKERS

1.00p.m. - 2.15p.m. LUNCH

2.15p.m. ROY DUTTON - "AN OBJECTIVE ANALYSIS OF THE UFO
PHENOMENON"

3.00p.m. GROUP SUB-SESSION REPORTS

4.00p.m. MARK STENHOFF - "A PROJECTED STUDY OF FLUID VORTICES
RINGS AND PLASMA PHENOMENA AS EXPLANATORY
HYPOTHESIS FOR THE UFO"

4.45p.m. IAN GRANT - "THE UFO PROBLEM - SOLVED?"

5.30p.m. approx. CONFERENCE CLOSED

All papers will be presented in the MALVERN SUITE on the SECOND FLOOR

NB Papers will be of twenty minutes length, normally, the remainder of the allowed
time to be devoted to questions

The closing time for the Conference is slightly flexible, but the Conference will end
in time for travel to other parts of the U.K.

Birmingham Centre Hotel

L E S S O N S

FROM

INTCAT

By

Peter Rogerson

(INTCAT - AN INTERNATIONAL CATALOGUE OF TYPE - 1 UFO REPORTS)

LESSONS FROM INTCAT

An international catalogue of Type 1 UFO records, and some possible lessons gained from its compilation.

(Summarised and amended from the BUFORA lecture)

DESCRIPTION OF INTCAT

INTCAT is a card catalogue comprising about 4,200 entries of records of ostensible Type 1 UFO experiences. The core of the work was originally centred around Vallee's Magonia Catalogue.¹ The catalogue as constructed at present is basically a reference giving a chronological list of cases with further references.

For the purpose of INTCAT a Type 1 UFO experience is one in which a percipient either

- (a) experiences observing an unconventional "machine" either on the ground or at less than 30 m (100 ft) altitude, or described as being at treetop, rooftop height or very low.
OR
- (b) experiences observing unusual "beings" (described as "occupants", "humanoids" etc) either associated with a low level "object", or alone, or even associated with "objects" at greater altitude than 30 m.
OR
- (c) experiences observing "objects" entering or leaving bodies of water in a controlled manner.

Reports of unusual ground traces not associated with a Type 1 UFO experience as defined above are omitted from the catalogue.

From the card catalogue several projects are planned.

(i) A master file of abstracts of the cases in the catalogue is being built up. From this file abstracts are published in English in MUFOB² and in French in UFO-INFO³. These abstracts are designed to give a condensed version of each case, providing possible information for those studying the subject from the viewpoints of both the social and physical sciences. It is hoped that a revision

of the parts of the catalogue will be published from time to time. Publication of the complete catalogue is projected for some future date.

(ii) A coded computerised inventory of the catalogue is being prepared for INTCAT by Dr Willy Smith of Williamsport, Penn. This computer list will be capable of being sorted into chronological geographical and typological lists. These will be primarily used for informing people of the contents of INTCAT and for exchanging data. This list can also be used as a data base for UFO groups rechecking cases in their area. Further details of this list will be presented in MUFOB when the list becomes available.

INTCAT is now the generic name being used for the international team conducting research into this field. Major contributors include Messrs. Richard Heiden and Barry Greenwood of the United States, M. Jacques Bonabot and co-writers in Belgium, Mr Bernard Delair in the United Kingdom and Snr Vicente Juan Ballester Olmos in Spain. INTCAT also maintains close contacts with the Humanoid Study Group. In every sense INTCAT is a cooperative project. I wish to take this opportunity to pay tribute to my co-workers in this project. We would be very interested in hearing from any other individuals involved in this line of research, who have material of possible interest to us, or think that we might be able to help them. Please contact us if you have such material - Peter Rogerson, 8 Braddon Avenue, Urmston, Manchester M31 1UE. Tel. 061-747-7459. Further details of various aspects of INTCAT can be found in refs. 4 and 5, and we shall be pleased to answer specific questions on the catalogue.

LESSONS FROM INTCAT?

The comments under this heading represent personal comments on INTCAT, and in no way seek to represent those of my fellow workers on this project.

INTCAT is a catalogue of UFO records, that is, of documents which purport to transcribe UFO reports. Unless these documents are

first person statements (either written or verbal) they are not UFO reports. UFO reports are the statements of people who are claiming that they have had UFO experiences. A UFO experience is usually an experience in which people experience observing an unconventional object or being, but it may involve other kinds of experiences, such as hearing voices, unusual telephone calls, etc. The only usable definition of a UFO experience seems to be "any experience which the experient feels to have been a UFO experience".

By no means all UFO records are generated by UFO reports (some are invented by journalists) and by no means all UFO reports are generated by UFO experiences (some are crude hoaxes). While we have positive evidence that UFO records and reports exist, we can only say (unless we have a UFO experience ourselves) that it is extremely probable that people have UFO experiences.

It becomes even more difficult to ascertain whether or not some UFO experiences are induced by special UFO phenomena external to the percipient. Severe reductive analysis of individual cases tends not to provide conclusive evidence of such a signal. Holistic examination of the UFO records, however, suggests various patterns ("wave years" "the law of times", "the law of population" etc). Recent developments suggest that the hoaxes may also obey these laws, though it is rather too early to say anything definite.⁶ Rather than the classical view of a meaningful signal being detected in a sea of meaningless noise, it is as if the noise itself was meaningful and showed pattern.

If these trends continue, reductive and holistic studies may come to radically different conclusions. Some very odd possibilities suggest themselves. What happens if each case on the BAVIC line turns out to be a hoax, yet BAVIC remains statistically significant?

The so-called "new ufology" is less concerned with using UFO experiences as evidence for some anomalistic phenomenon "out there"

with studying the totality of the UFO experience as a phenomenon in its own right. Indeed the whole UFO syndrome (the generic term for the experiences, reports and records) is held to be meaningful. The hoax and reality seem to merge, and we may see in the hoax the expression of a naive art form. Scoriton would be an example of this art form.⁷

The UFO experience itself seems to involve a departure from conscious reality into what one might call an autistic reality. We cannot be certain that some hypothetical outside observer would share the experient's experience. Frequently one hears the UFO experience described in terms such as "everything was very silent, not even the night noises were heard", "there was something odd, the roads are usually busy but I encountered no traffic that night". In recent cases we have reports of people claiming to have experienced a transformation within the scenery, such as traffic disappearing,⁸ experiences in wholly dream like "journeys into the badlands",^{9,10,11.}

There are experiences such as Mr L⁽¹²⁾ and Miss Z⁽¹³⁾ whose subjective nature is indisputable. This suggests that UFO experiences might be related to such "edge of reality" events as out of the body sensations, bad dreams and apparitions. Celia Green and Charles McCreery of the Psychological Unit at Cambridge University have labelled such experiences collectively as metachronic experiences, those in which the environment of conscious reality is replaced by an hallucinatory environment.^{14 15 17} Other lines of possible value include Charles Tart's concept of altered states of consciousness,¹⁸ Laurence Le Shan's concept of alternate realities,^{19 20.} Jung's depth psychology,²¹ to say nothing of various avant garde speculations in theoretical physics, social psychology and philosophy.

The answer to the question, "Do UFO experiences represent real events?", is likely to be, "What do you mean by real?"

R E F E R E N C E S

- 1 Vallee, Jacques - A century of UFO landings in Passport to Magonia, from folklore to flying saucers. Regnery 1969. The catalogue is not published in either the Spearman or Tanden editions. The introduction to the catalogue gives a general background to Type 1 studies and the early history.
- 2 MUFOB, edited by John A Rimmer, 11 Beverley Road, New Malden, Surrey. KT3 HAW. This bulletin is a major source of material on the new ufology, and specialises in the social science and humanistic aspects of UFO research.
- 3 UFO-INFO Journal of GESAG ed. Jacques Bonabot. A valuable source of French language material.
- 4 MUFOB Vol 5:3, Winter 1972-73, Introduction to INTCAT gives a basic survey of the early history of the project.
- 5 MUFOB - New Series 6 - gives details of the new reference system used.
- 6 Recent developments in France are indicating that a fair percentage of the CE III cases of that period are hoaxes. If the number of negative type I cases is as high as 80% (Lagrade's estimate) then one must assume that the laws of ufology derived from that wave are properties of the records themselves. (Source of data Jacques Bonabot and Alain Garrard - Personal Communications).
- 7 Oliver, Norman T - Sequel to Scoriton, 1968.
- 8 The Fencehouses case. NUFON News No 33. (Reference added to the original).
- 9 Clark Jerome. A weird encounter in Utah FSR Vol 16, No. 5 p 21 (plus personal communications from Jerome Clark).
- 10 The Oxford Maine abduction case, see various authors in FSR Vol 22 No 2.
- 11 Vlierden, Carl van, Escorted by UFOs from Umuuma to Beit Bridge. FSR Vol 21 No 2 p3.
- 12 NUFON News No 27 p8.
- 13 Rogerson, Peter and Rimmer, John. Visitors in the Night. MUFOB New Series No. 4.
- 14 Green, Celia. Out of the Body Experiences. Ballantine, 1973.
- 15 Green, Celia. Lucid Dreams. Hamish Hamilton 1969.
- 16 Green, Celia and McCreery, Charles. Apparitions Hamish Hamilton 1975.

R E F E R E N C E S

- 17 Green, Celia. The decline and fall of Science. Hamish Hamilton 1976.
- 18 Tart, Charles (ed) Altered States of Consciousness. Wiley, 1969.
- 19 Le Shan, Lawrence. The medium, the mystic and the physicist. Turnstone, 1974.
- 20 Le Shan, Lawrence. Alternate Realities. Sheldon Press, 1976.
- 21 Clark, Jerome and Coleman, Loren. The Unidentified. Warner 1975.

BUFORA CONFERENCE 1976

T H E A L P H A B E T O F U F O

R E P O R T S

J WEBBER

THE ALPHABET OF UFO REPORTS

This session is one of the preliminary 'get-togethers', and its object is to get you thinking about the very important first moves in the general study of recording UFO events.

When one starts to learn a language, the first essential is its alphabet, both written and phonetic.

Now what is the UFO Alphabet? It is the letters that make up the words without which we cannot communicate our visual and mental impressions to others. We all probably think we know these letters, but I wonder if we really do.

Most reports come to us from other people, which only makes things more difficult. Let's suppose, therefore, ~~that~~ we ourselves observe a UFO. It's a UFO because we haven't yet identified it. What should we do? What should we first record? And how proceed onwards?

Well, we want to know three things: When it happened; Where it happened; and How it happened.

Having recorded these points we must then try to collect as much ancilliary information as possible so that we can later consider What happened, and perhaps Why.

Now, the first three interrogatives are of basic importance, and, because they appear so simple, merit far more attention than we usually give them at present. This is because from them we may be able to deduce further facts.

I am making no apology for labouring these points because we are all too well aware that most sightings appear to be isolated incidences, and we ought to consider whether this impression is real, or whether it is due to imperfect recording methods.

Now we must become more specific and practical. Most incidents appear to occur unexpectedly when we are least prepared. As an observer our first duty is to answer the first question, When? So, note down the time by watch, and as soon as possible check the watch with a standard time signal, Radio or TIM. Note down any discrepancy, and the adjusted time stating the method of checking, and always add a symbol showing whether it is Greenwich or Summer. (G or S). This is essential around the period of the Spring and Autumn time changes, but should be standard procedure always. Furthermore, use the 24 hour clock which is normal in all disciplined records nowadays. Any Date in a year begins at the instant of midnight at 00 hours, and ends 24 hours later at 24 hours which is naturally 00 hours of the next day. (if using minutes as well two noughts must be added to each figure). So much for When, now Where.

Most published reports give some sort of topographical point where the sighting was made. Readable, but too vague for study purposes. The best, and shortest description is the National Grid Reference of the spot. O.S. maps are overprinted with the Grid and instructions for its use are given at the bottom. On the 1" to 1 mile and 1 in 50,000 scales the reference is to be nearest 100 metres, but these can be read and given to 50 metres by the addition of $\frac{1}{2}$ symbol after the third and sixth figures. On 1 in 25,000 scale with a pair of dividers a position can be given to 10 metres. The reference then contains two prefix letters and eight figures. Heights above Mean Sea Level can be estimated from the contour lines.

Now you may say, Is this accuracy really necessary? Well, it takes very little time, and if, by a lucky chance, two sightings of the same object are obtained from different points, a cross bearing can be plotted, which then shows the spot on the ground vertically below the object, its Ground Zero. And if, at the same time an angular height of object is measured, linear height above Mean Sea Level can be calculated. Furthermore, if 2 or more G Z's are plotted an accurate course is shown, and

provided a time of observation is recorded for each bearing, angular and linear speed calculated.

So now we're well into the next question, How? The rest of How depends on visual observation and this is best recorded by a running commentary on tape. The Time element here must be provided by including time checks (without stopping the tape) during observation at least at the start and finish, and also where there are changes of speed, at which time bearings should also be taken.

This is an ideal to be aimed at and presupposes a prepared position and a simple instrument for measuring bearings and elevations. I have here a mark 1 D.I.Y.S. Instrument which you can study later. It has the advantage of recording direction and height while it is used, and only needs the time element added verbally into a running tape. So all this can, with a little practice be carried out by one person, although two would be preferable for the collection and checking of the further details we hope to obtain.

But we can't walk about with it under our arm on the chance of something happening. So what should we do then?

Most of us carry a watch, a diary, and pen. So we can record time without trouble. And, after the incident, without shifting our position, we can make a note of where we stood. During daylight we can relate positions in the sky to points on the skyline. Angular heights can be measured by using our pen or other suitable object, and such data should be noted down immediately. Then, later a return visit with instruments to the exact spot will allow us to translate the noted data into degrees etc with reasonable accuracy.

By night we are just as well off with a skyline, and also a ready made grid of reference, provided the sky is clear, the Stars. Get to know the Constellations; it's quite simple really if you buy, and use frequently, a pocket Star Guide

Book, which will show the stellar appearance for each month of the year. You will then be able to practise on any satellite or aircraft that obliges, plotting their courses through various star groups.

The same basic procedure can be used when investigating Press or other reports, by setting up a Post on the sighting spot.

Now I'm going to turn from the theoretical to a particular case that shows why I consider the foregoing so important. It is one of the few I've come across in years of reading reports. It was published in FSR Case Histories Supplement 15, June 73, entitled "The Los Angeles Basin Sightings", and written by Ann Druffel.

In all there were 5 sightings of the same objects from 5 different towns at least 5 miles apart. The Tabulation opposite gives all the relevant data as reported. From the Tab. I made a rough sketch map of the relative positions of the towns, and studying the sketch and Tab together showed the lucky chance that the best information came from 3 towns and could be used for cross-plotting.

First. Points to note from the Tab

- (1) The two more Northerly places report direction of transit slightly different from the remainder
- (2) Two witnesses at La Canada were astronomy experts.
- (3) The Los Angeles sighting passed "directly overhead" West to East
- (4) Los Angeles and La Canada give observed transit arcs of 45° to 50° .
- (5) The estimated period taken to transit this arc at La Canada is 20x longer than at Los Angeles (5 minutes to 15 secs.)

ESTIMATION OF HEIGHT OF FLIGHT PATH

Here is a sketch map showing relative ground positions of the three towns and the distances between them.

(A) is Los Angeles: Course W-E, o/h so we will draw a meridian and a parallel

(G) 9 miles N of (A) is Glendale: draw a meridian and a parallel

(C) 7 miles NE of (G) is La Canada: draw a meridian

(X) is the point where the parallel from (G) cuts the meridian from (C), and (Y) the point where parallel from (A) cuts

Since GC is bearing NE angle $CGX = 45^\circ$ and therefore

$$GX = CX = \sqrt{\frac{1}{2}(7)^2} = 5 \text{ mi approx}$$

$$CY = 5 + 9 \text{ mi} = 14 \text{ mi}$$

HEIGHT TRIANGLE

$$ACO = 80^\circ \quad AC = 14 \text{ mi}$$

$$AO = 14 \tan 80^\circ = 79.4 \text{ mi approx}$$

We can ignore the earth's curvature since it is only $\frac{2}{3}$ of a foot $\times 14^2$ feet

Similarly we can find the length of the observed transit path at Los Angeles as 68 mi

Est. time of transit = 15 sec

$$\text{Thus speed} = \frac{60}{15} \times 60 \times 68 \text{ mph} = 16,320 \text{ mph}$$

If we take the La Canada time as more accurate it would be 1/20th of this or 816 mph.

Lastly I had a go at the linear distance apart of the pairs of lights. This distance of the flight patch from (C) was approx 80 mi and the angle 7° . This seems to give a separation of about 10 mi. Rather too far apart for lights on the same object?

$$\left[\text{Separation formula} = 2 \left[\text{dist} \times \tan \left(\frac{\text{angle}}{2} \right) \right] \right]$$

Now I'm going to take a step backwards and show the simplicity and accuracy of using the National Grid for recording positions on the ground.

Here is a representation of the Grid as it appears on OS maps. It simply consists of vertical and horizontal lines making up squares. The main lines are 100 Km apart and each 100 Km square is given a pair of letters for recognition, and each sheet shows at the bottom the lettered square or squares in which the area is situated.

The numbers round the edges of the map show the number of Kms. East or North of what is called the Origin of the Grid. (This is a point in the Atlantic SW of the Isles of Scilly).

The lettered 100 Km squares are sub-divided into 10 Km squares which themselves are divided into 1 Km squares, and these are the smallest shown on the sheets. However, they are easily subdivided by eye on the 1" or 1/50,000 scales into 100 metre units.

Here is a point P whose NGR we wish to read. We start at the bottom left-hand corner of the map and go along until we reach the Grid line next before P and note its number. Then we climb until we reach the next grid line below P and, leaving a gap after our note of the previous number, note down its number. This brings us to the bottom left-hand corner of the 1 Km square in which P is situated.

Now, either by eye, or by using a moveable scale, (or Romer), we estimate first the tenths of a square eastwards to P and add its number to the first two written down, and then do the same going in a Northerly direction, again writing it down. Finally we prefix this six-figure number with the letters shown at the bottom of the map. Thus we now have the full Grid reference of P to the nearest one-tenth (or 100 m) of a Km. This reference is unique in the British Isles, and can be used on all OS and some other maps which use the 100 Km Grid. (The AA Members Handbook maps are so overprinted even though the scale is $6\frac{1}{2}$ miles to 1").

On the new 1/50,000 and larger scales, a pair of dividers can be used which enables the reference to be read to 10 metres, although on these scales the Reference must contain 8, instead of 6 figures.

We've now reached a point at which you can join in, so if you have any points to raise I'll do my best to answer.

ADDENDUM

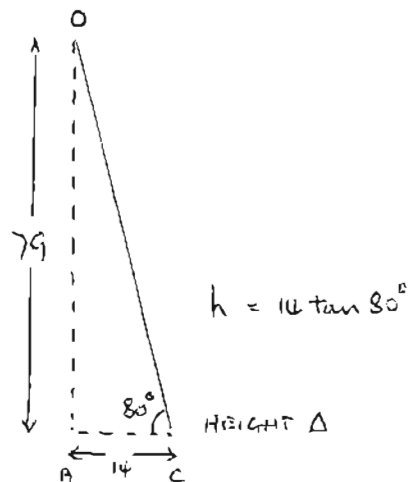
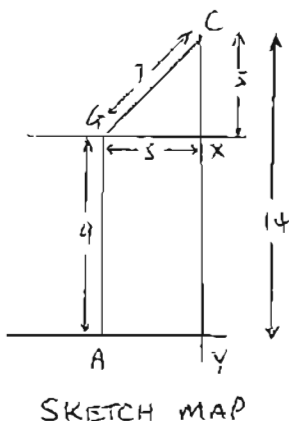
The beauty of this Grid Ref. is that not only does it enable you to find the position of a place on the map, but also that, given 2 or more Grid refs. you can find quite simply and without using rulers or protractors, or even a map, the bearings and distances between them. For bearings the formula is $\tan X^\circ = \frac{dN}{dE}$ and the distance between them is $\sqrt{dN^2 + dE^2}$ Km (dN = difference in Northing; dE = distance in Eastings) or having found the bearing you can get that distance by using the sin or cos formulae.

Taking this one stage further, given the Grid references of 2 sighting points and the bearings or the object from them you can find its GZ, and also its bearing and distance from any other Grid Ref.

And if you've found its GZ, and know its angular elevation, you have its height. And if you know its angular size you can find its linear size. Again, given 2 bearings from one spot and the time lapse between them, you have its speed.

LOS ANGELES BASIN SIGHTINGS 3.4.73

TIME	PLACE	BEARING	DISTANCE	FROM -	DIRECTION OF TRANSIT	1ST ELEV	2ND ELEV	3RD ELEV	TRANSIT DUR.	
1900-1915	LAKEVIEW	NW	MILES 12	GLENDALE	WNW-SE	25°	0/H	25°	-	
- " -	LA CANADA	NE	7	- " -	NW-SE	50-60°	30°	-	45-50° SWY. ABUT SMOKE PISA PISA	" C
1910-1920	LA CRESCENTA	NW	5	- " -	W-E	-	-	-	-	
1910	GLENDALE	N	9	LOS ANGELES	W-E	75°	-	35°	-	" G
1905-1925	LOS ANGELES	-	-	-	W-E	75°	0/H	60°	10-15 SECS	" A



THE PREDICTION OF UFO "WAVES"

BY

J B DELAIR

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THE PREDICTION OF UFO "WAVES"

It was not until the early 1950's that pioneer ufologists began to systematically collect and chronologically arrange UFO reports on an appreciable scale. Once begun, however, the advantages of processing reports in that way became quickly apparent, one of the earliest important realizations being that UFO activity occurs periodically in "waves". All subsequent systematic processing of UFO reports has not only confirmed the reality of these waves but has shown that they have continued right down to our own era. One of the findings of the ill-fated Condon Committee concerned the virtual impossibility of predicting where and when future UFO waves will occur⁽¹⁾. Indeed, occurrences of waves at specific points in time have almost always only been determined long after the waves themselves have passed, recognition of their actual occurrence usually coming through later accumulations of sighting reports for the relevant periods. An especially good illustration of such "hindsight recognition" was the enormous UFO wave of 1947, the real extent of which remained unknown until 1967 when the researches of Ted Bloecher disclosed its true magnitude⁽²⁾. As the physical accumulation of UFO reports for practically any period is both geographically uneven and temporally erratic, being normally dependent upon publication and/or exchange of information by the mass media and the various UFO organizations, it is easy to appreciate why recognition of the occurrence of UFO waves is often far from immediate. This, of course, is a very unsatisfactory state of affairs. If the past endeavours of a large percentage of ufologists form a reliable index of their prime interests, then it can be truthfully stated that the holding of skywatches looms large on their agenda. Although no statistics are known for the number of skywatches actually promoted since 1947 (when the existence of UFOs first became generally known) or for the types of skywatch venues selected, it is easy enough to see why all skywatches should be scheduled directly in relation to the known UFO record. This observation applies with equal force to local, national, and international skywatches. Unfortunately, the majority of skywatch organizers seem to be either unaware of this requirement or persistently ignore it. Accordingly, skywatch results are frequently mediocre and sometimes downright poor - even on

occasions when favourable viewing conditions prevail. An example was the recently reported skywatch of July 5-6, 1975⁽³⁾, which, though well equipped and undoubtedly well intentioned, was doomed to failure before it began because it was almost certainly held during the wrong month: the result was that no UFOs were sighted at all.

PREDICTION 2 - In my estimation, most skywatches have been and are staged on the wrong dates, whereby much time, not to mention effort and finance, is expended to very little good effect. The degree to which many would-be UFO spotters become disillusioned on these occasions must also be very high.

Ideally of course, skywatches should be arranged to coincide with UFO waves or with periods when such waves may be reasonably expected to occur. Obviously, the likelihood of actually sighting UFOs then would be much greater than during most of the present arbitrarily arranged skywatches. The successful dovetailing of skywatches with UFO waves, however, requires some reliable method of forecasting when and where future UFO waves will be most likely to take place. Although our present ability to predict where future UFO waves will occur is still almost nil, indications are beginning to emerge that suggest when such waves will probably occur. The development of these indications into a workable forecasting method should not only be useful to all skywatch organizers but ought to be of general interest to ufologists everywhere. The remainder of this paper is devoted to a consideration of them.

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The emerging indications just alluded to have resulted from recent statistical comparisons made between the contents of UFOCAT and WUFOC, the two largest collections of UFO reports currently available. UFOCAT, is a computerized catalogue of over 85 000 chronologically listed reports compiled by Dr David Saunders of the Centre for UFO Studies in Chicago, and WUFOC is the World UFO Catalogue of over 43 000 chrono-

logically arranged reports assembled by the Data Research division of Contact (UK) in Oxford. Although both these sources are incomplete, partially overlap, and are constantly being added to, it is nonetheless felt that the record they collectively represent constitutes a truly comprehensive cross-section of UFO activity as a whole, and as such, permits valid conclusions to be reached through in-depth studies of their contents. The conclusions presented at the end of this paper have been based upon just such studies.

For various reasons, it seems sensible to treat the overall UFO record in two sections - the MODERN era commencing January 1st, 1947, and the HISTORICAL era ending December 31st, 1946. Of these, the former is by far the best documented and embraces the largest number of known reports, which, if expressed as a graph produces the following UFO activity profile (see fig 1). This profile, of course, is based upon global statistics. It is immediately seen that this profile is typified by a series of peaks and troughs, the peaks corresponding to the aforementioned UFO waves. Advancing from 1947 we find that peaks occurred not only in 1947 itself but also in 1950, 1952, 1954, 1956, 1957, 1962, 1964, 1965/6, 1967, 1968, 1972, 1973/4 and, apparently in 1974/5. Our knowledge of UFO activity during 1974/5 is still rather deficient as many reports are still being received for that period.

At first glance there seems to be little consistent pattern to the distribution of these peaks; but if we probe deeper it is possible to distinguish two apparently separate patterns - an approximate 10-year cycle represented by the peaks of 1947, 1957, and 1967 and an apparent 6-year cycle comprising four peaks separated from one another by intervals averaging two years. Thus, the peaks of 1950, 1952, 1954, and 1956 form one 6-year cycle, and the peaks of 1962, 1964, 1965/6 and 1968 another. Very probably the peaks of 1972, 1973/4 and 1974/5 form part of another but as yet uncompleted 6-year cycle that will presumably end sometime about 1978. Of interest is the fact that the 10-year and 6-year cycles are out-of-phase with one another, or at least appear to be so to us.

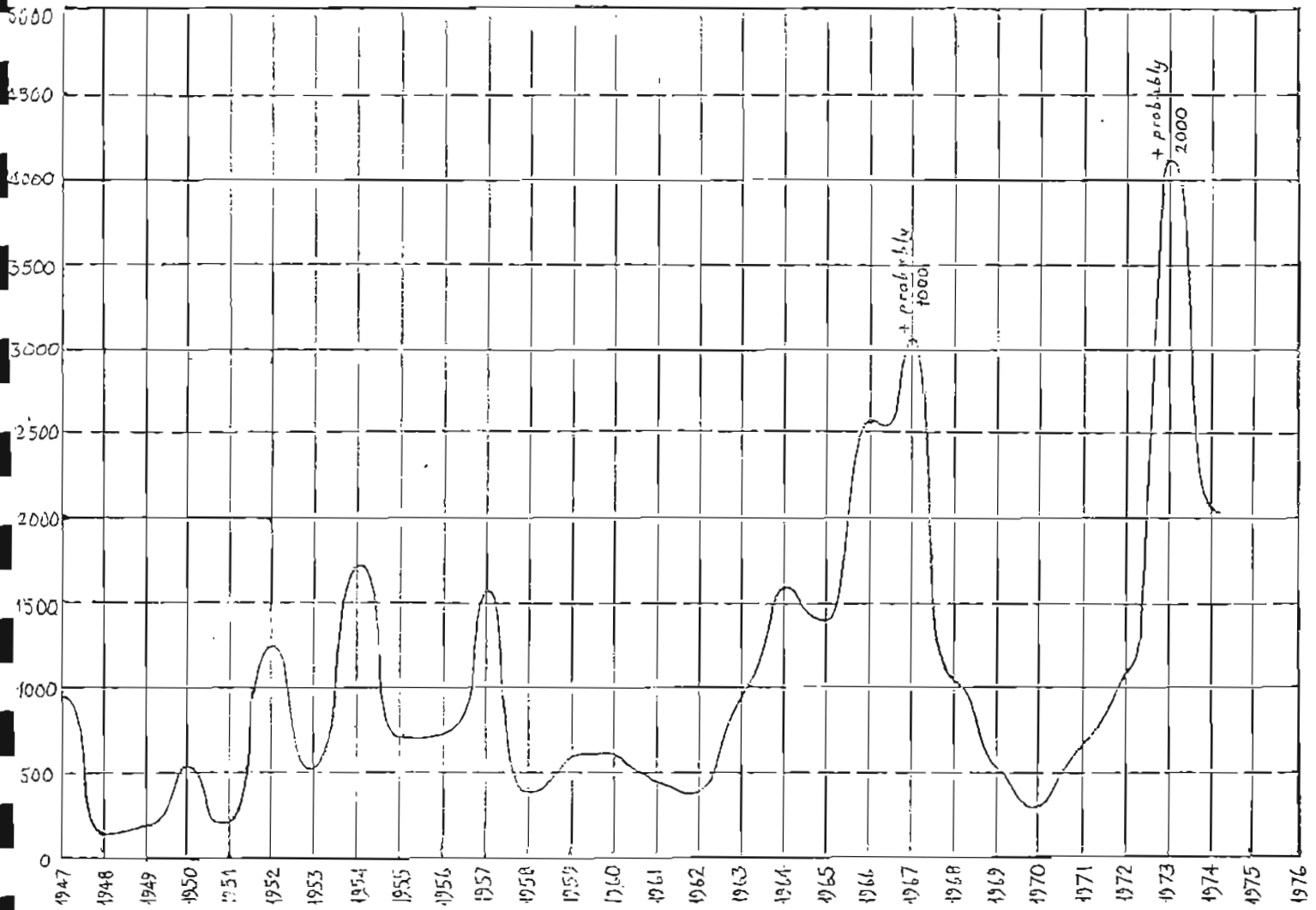


Fig. 1

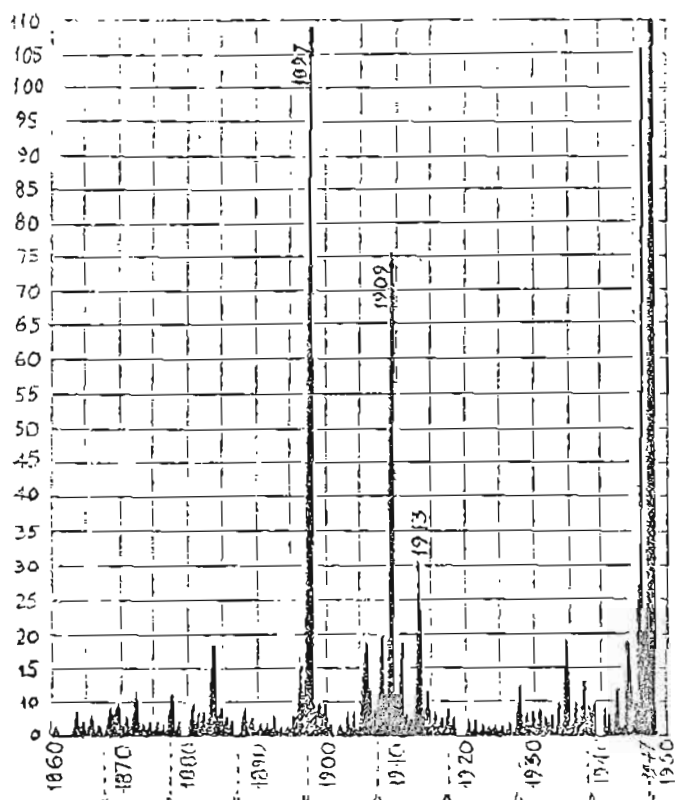
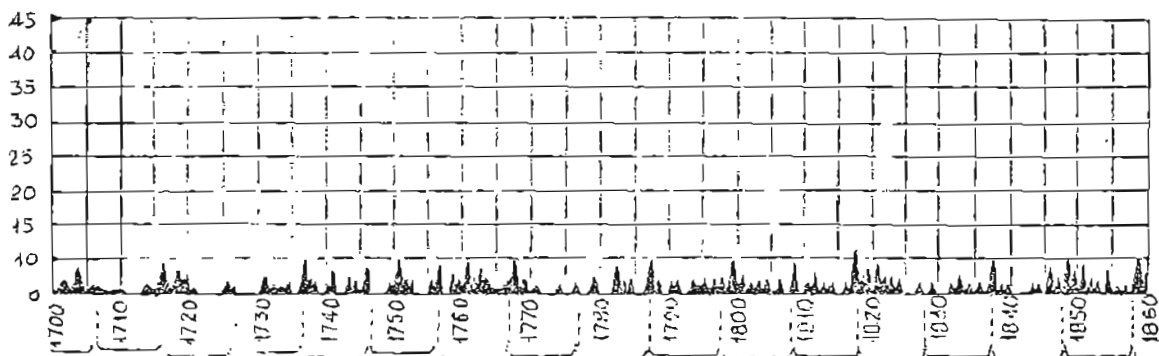


Fig. 2

PREDICTION 2 (CONTINUED)

For the sake of convenience we will henceforth refer to the UFO activity peaks typifying the 10-year cycle as TYPE A waves, and those exemplifying the 6-year cycle as TYPE B waves.

As the exact periodicity of the TYPE B waves is still uncertain, it seems sensible for the remainder of this paper to concentrate upon the more readily identifiable TYPE A waves. Before leaving TYPE B waves aside, however, it may be significant that the largest concentrations of recorded UFO landings and ufonaut cases have tended to occur during TYPE B waves, not during TYPE A waves. 1952, 1954, 1964, 1968, 1973 and 1974/5 when heavy concentrations of landings and UFO occupant cases occurred, were all TYPE B waves!

PREDICTION 3

The reality of an approximate 10-year cycle for TYPE A waves is apparently confirmed if the known UFO activity predating 1947 is also expressed as a graph profile. Figure 2 shows the UFO record plotted in this way back to AD 1700. Since the records spanning the 1700 to 1946 period generally fall below preferred standards and are far from satisfactory, little seems to be gained by attempting extensions of the activity profile back to still earlier times. Despite their overall paucity, however, the pre-1947 records probably represent a reasonable sample of the UFO activity that actually occurred then, and do seem to indicate a series of recurrent peaks separated by intervals fluctuating between ten and eleven years. The almost clockwork-like periodicity of the post-1947 TYPE A waves probably derives from our immensely more detailed knowledge of them. Were the pre-1947 UFO records as detailed then perhaps the intervals would be nearer 10 than 11 years, right back to AD 1700. It should nonetheless be noted that the 1947 TYPE A wave peaked in early July, that the 1957 TYPE A wave peaked in November, and that the 1967 TYPE A wave peaked in America during March and April and in Europe during the latter half of October.

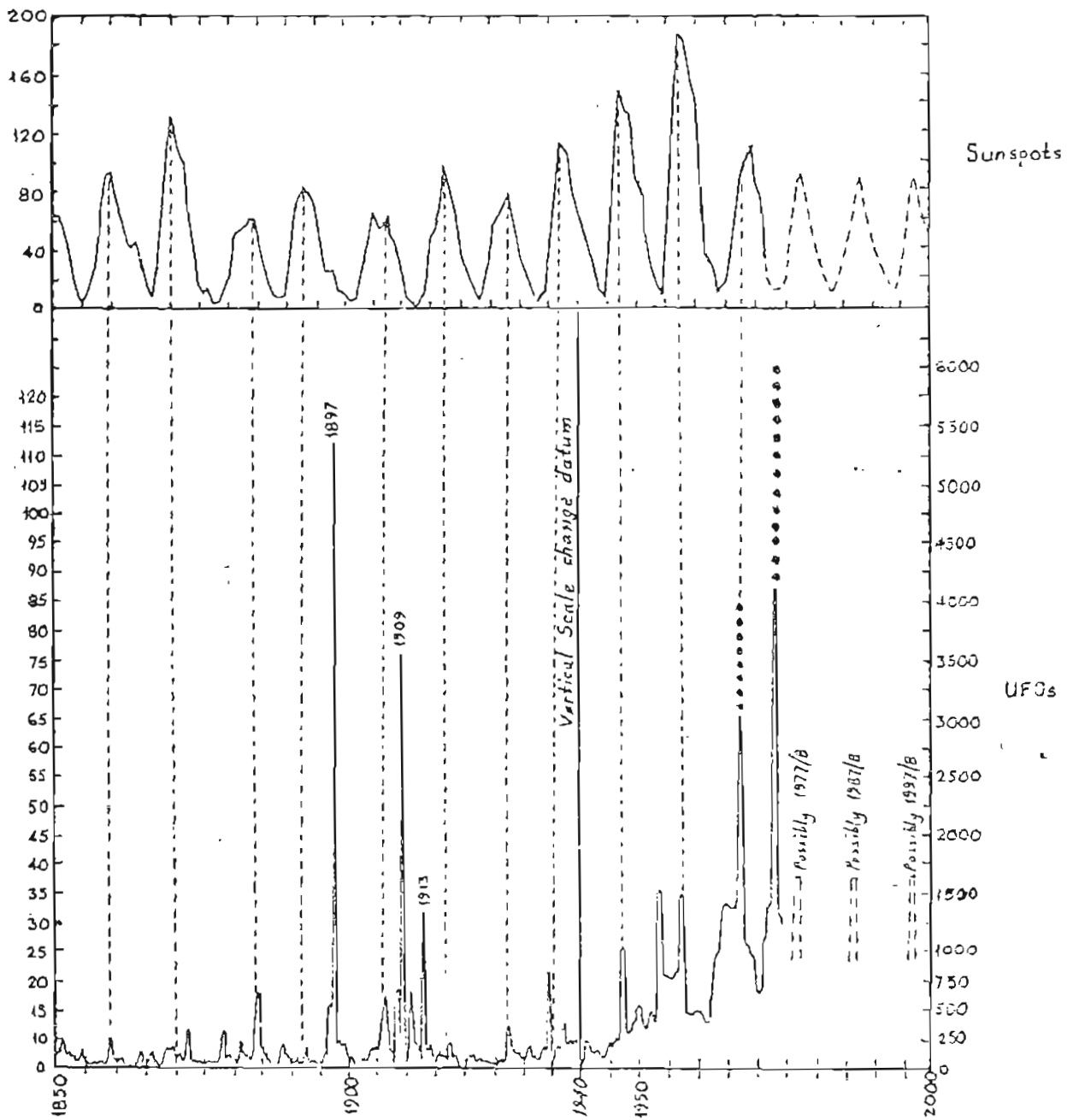
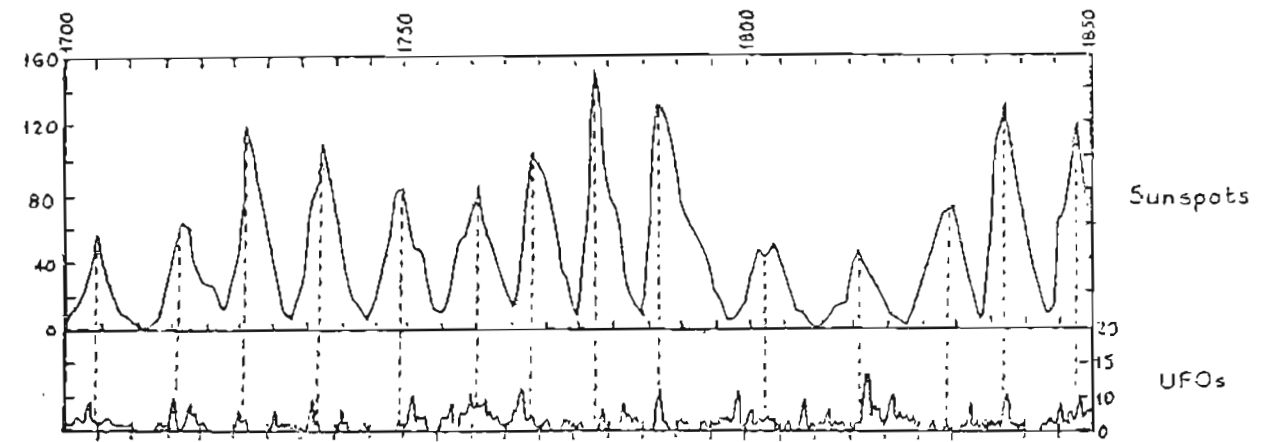


Fig. 3

PREDICTION 3 (CONTINUED)

In my submission an approximate 10-year cycle for TYPE A UFO waves does indeed seem to be traceable in the known UFO record to as far back as AD 1700. On such a basis it is possible to predict that future TYPE A waves should occur in 1977 (or 1978), in 1987 (or 1988) and in 1997 (or 1998), dependent upon whether or not 10 or 11 year intervals occur between them.

PREDICTION 4

The determination of an apparent 10-year UFO cycle from highly emotive raw material (ie UFO reports) is scarcely strong enough to stand on its own without corroboration from one or more other sources, and an attempt has been made to find such confirmation elsewhere.

As the UFO phenomenon seemingly takes place against a natural astrophysical/geophysical background a general appraisal of the many elements constituting those fields has been undertaken, in the hope that the desired confirmation would be forthcoming from that direction. Although most enquiries have produced little or no helpful data on this matter, one line of evidence has proved to be unexpectedly promising. This is the Solar sunspot cycle, which although averaging 11.1 years, fluctuates between 9.7 years and 14 years (in 1790) if the official sunspot figures published in astronomical literature (4; 5; and 6) are consulted. Sunspot cycles, if expressed as a graph back to AD 1700 (to coincide with our sampling of the known UFO record), provide the following profile (see fig. 3).

If, by adding the pre-1947 UFO activity profile to the sunspot profile, a comparable series of peaks and troughs are discovered, then, because the periodicity of both sets of phenomena is closely similar, the natural sunspot cycle can be used as a yardstick, so as to speak, against which to judge the apparently artificially induced UFO waves (in particular the TYPE A waves). In point of fact the periodicity of sunspot maxima coincides to an astonishing degree with that of TYPE A UFO waves. These are shown as the upper profile in figure 3. Faced with this degree

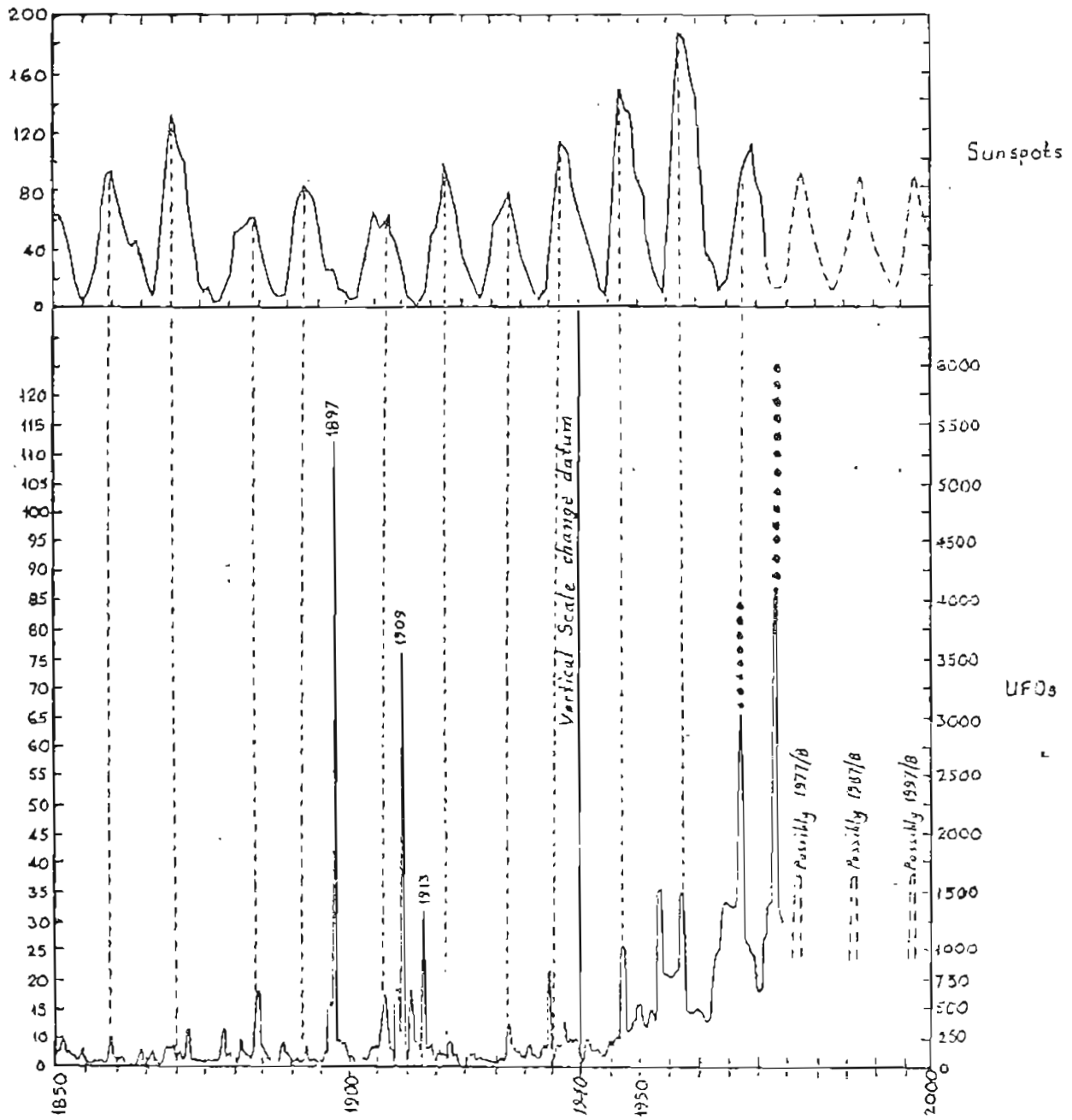
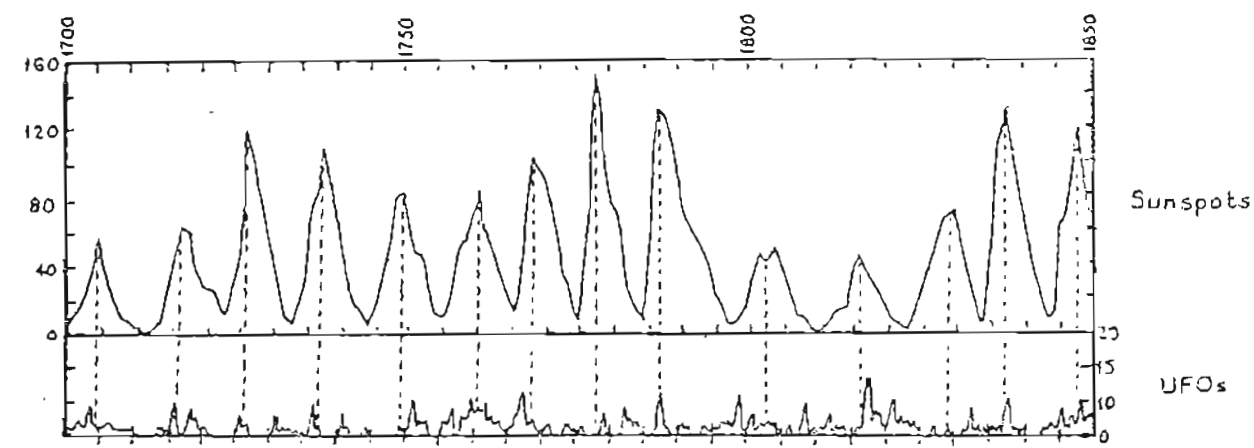


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PREDICTION 4 (CONTINUED)

of coincidence it is difficult to dismiss such close similarities. Since both phenomena apparently coincide quite well temporally, the sunspot cycles can, I suggest, henceforth be used to help predict when future TYPE A UFO waves will occur.

This paper does NOT suggest that UFOs and sunspots have a common cause or origin, but would recommend that more detailed work be attempted with regard to the apparent coincidence between the two cycles. The consistent and persistent recurrence of both in such remarkable unison over the past 250 years certainly indicates the possibility of a real connection of some kind existing between the two. These factors alone confirm the reality of recurrent TYPE A UFO waves.

PREDICTION 5

In conclusion, therefore, it is asserted that UFO waves are not only well known but have been occurring for centuries, that two apparently separate cycles occur - a 10-year one the peaks of which we have called TYPE A waves and a 6-year one the peaks of which we have called TYPE B waves. It has been further noticed that the majority of skywatches are staged on occasions when no UFO waves occur, with consequently poor results. The use of UFO wave periodicity information should be attempted by skywatch planners, and a suggested method of forecasting future UFO waves (especially TYPE A waves) has been submitted for their guidance.

TYPE A waves apparently occur every 10 years or so, and the next waves in that category, it has been suggested, will probably occur in 1977 or 1978. Later TYPE A waves are expected to occur in 1987 or 1988 and in 1997 or 1998. As 1977 is now but a short way off it is also strongly recommended that concerted efforts be made to stage co-ordinated skywatches from the summer months of 1977 onwards, since available evidence indicates that TYPE A waves generally occur between the months of June and December. Obviously the largest number of field observers active during those months should collectively stand an excellent chance of making truly worthwhile observations. Finally, as no method appears to presently exist with regard to where the next UFO

PREDICTION 5 (CONTINUED)

waves will occur, it is stressed that if every ufologist in Britain takes to the field from June onwards next year it does not necessarily follow that numerous UFOs will be sighted then over Britain. It could very well be that the centre of the next TYPE A wave will be in some foreign locality. Nonetheless we must at least try to put as many observers as possible into the field then and to co-ordinate their viewing and reporting activities. The possibilities are strong and the results could be exciting.

J B DELAIR
AUGUST 1976

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CLOSE ENCOUNTERS OF THE THIRD KIND

BY

TED BLOECHER

ABSTRACT

Close encounters of the third kind, or reports of humanoid entities seen usually in association with UFOs, are described and case examples of one year ago are cited. Background for CE III reports is outlined and a clarification of ambiguous terminology is suggested. Basic entity types are organized by size, and recurrent features of appearance and behavior are discussed, including activities, communication, abductions, physical effects, etc. Association of CE III's with witnesses in vehicles, and distribution of reports geographically and with wave peaks are reviewed. A classification for association of entities with UFOs is suggested, as well as a simple method of rating CE III reports, based on completeness of case reports. The Humanoid Study Group and the Humanoid Catalogue are briefly described.

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Paper prepared for delivery
At the BUFORA UFO Conference
Held in Birmingham, England
November 5 - 7, 1976

Completed

September 20, 1976

CLOSE ENCOUNTERS OF THE THIRD KIND

Just one year ago, during autumn 1975, a number of unusual events that involved strange humanoid beings reportedly occurred in North America within a period of a few weeks. These and other similar experiences, bizarre in content and uncertain of apparent meaning, are the source of our subject matter at this conference in Birmingham, England, under the sponsorship of the British UFO Research Association (BUFORA). They are Close Encounters of the Third Kind, as described by Dr J Allen Hynek of Northwestern University, and Director of the Center for UFO Studies in Evanston, Illinois.¹ These reports are the continued source of great disbelief, confusion and controversy; even so, they could represent new empirical evidence of events that may have far-reaching significance for the human race. They may be the visitations of alien civilisations or they may be, as some researchers are suggesting, poorly understood manifestations of the human psyche about which there is much to discover. Whatever their source, Close Encounters of the Third Kind (or CE III's) continue to be reported and in greater numbers than ever before; not only are there more reports, the "strangeness" content of the reports has escalated as well. The events that took place just one year ago illustrate this succinctly:

. . . Early in November, a woman and her daughter, driving home along a dark street adjacent to the Coosa River in Birmingham, Alabama, saw standing by the side of the road two enormous figures at least eight feet tall. They wore ankle-high silvery shoes and their clothing was close-fitting, of a dull silver color. The woman, who was driving, did not have as good a look at these peculiar beings as her daughter, who described them as "wearing helmets of some kind" on their heads. The fronts of these helmets either picked up reflections from the car's headlights, or they had self-luminous surfaces. The figure standing nearest the road held one arm over his head. The women were startled by their unusual appearance and, swerving in the road, stepped on the gas and hurried by without stopping to investigate.²

. . . A young woman, driving home from work on October 14 at 5.30 am, near Peers, Alberta, (Canada), saw what she first believed was a cattle truck parked in the road ahead with its lights on. As she drove closer she saw that it was an object standing in the road with two "men" standing motionless on top, each holding a long rod or staff in his hands. The figures were wearing helmets on their heads and she could not see their faces. She drove hurriedly by and, at home (about one-half mile away), got two additional witnesses and returned immediately to the site; when they arrived, less than ten minutes later, there was nothing to be seen of either the men or the object.³

. . . An elderly couple living in the Milwaukee (Wisconsin) suburb of Wauwatosa were at home in the evening of November 10 when their doorbell rang. The wife answered the door and found, standing on the steps, a strange "man" wearing a narrow-brimmed hat with a brown face "like smoked meat" marked with numerous vertical grey lines; his chin was narrow and his mouth merely a small opening no more than a quarter-inch wide. He was holding a white rod five feet long. When he did not respond to her queries, the woman called her husband; upon seeing him the man said, "What the hell is this, something left over from trick or treat?" and made a grab for the figure. As he reached forward, the entity hit the ground with the rod, making a "Click", and immediately glided backwards out of reach. At this, the man went into a kind of shock; before retiring to the couch, he and his wife saw at least four other similar beings on the lawn and in the street, moving about in long slow jumps, "like the astronauts on the moon", hitting the ground with their rods and then floating several inches above the lawn. They looked deformed, "like gnomes", with claw-like hands and bowed legs. As the being who rang the bell drifted across the lawn, he raised an arm to the witnesses, displaying a bent hand. Although the husband had a close look at his face, the man was unable to recall any details except the small mouth. There were no reports of UFOs in the area.⁴

. . . Two youths, driving near Poland Springs, Maine, on October 27 at 2.30 am, found they no longer had control over their car. As the vehicle proceeded over a back road near a lake they saw a large cylindrical object rise up over a field. A number of strange events occurred, including the presence of a fog or mist which enveloped the car. They finally drove away but later, under an irresistible impulse, the youths returned to the site and again observed this, as well as another object. When they returned home at dawn, they were unable to account for a missing period of time, or for some odd physical effects that began to plague one of the youths. Under hypnotic regression several weeks later, this young man recalled being removed from the car somehow and finding himself, in the next instant, looking down from a porthole-like window aboard the craft at his car and his companion, who was still inside. He was then confronted by a four-and-a-half foot being of strange appearance who communicated with him telepathically, telling him not to be afraid. He was led into another room where he was instructed to undress, and was then subjected to a physical examination by four similar beings. Blood samples were taken and a machine with dials "scanned" his body; he was then instructed to dress and next found himself back in the car with his companion, who seemed to have been unaware of his absence. The youth had been told they would see him again. The experience was followed by strange disturbing physical effects, which passed after a period of time. The youth and his family reported seeing UFOs on numerous occasions thereafter; other strange events too complex and involved to include in this summary were associated with the youth and his family. The experience occurred during a spate of reported UFO sightings in the area.⁵

. . . On November 5, about 6.30 am, seven forestry workers riding in a truck about 12 miles from Heber, Arizona, observed a UFO at close range over a clearing near the road. One of the men, Travis Walton, jumped out of the truck and ran toward the object; as he approached, a beam of light from the UFO struck him, lifting him into the air and then felling him. The others drove off in a blind panic; some miles ahead, thinking better of their reaction, they turned around and drove back to the site finding neither Walton or the object. Five days later Walton

called his family from a telephone booth outside Heber, where he was picked up, unshaven and exhausted, with a puncture mark on his arm. He said that he had come to, apparently inside the UFO where he found himself lying on a table and surrounded by five-foot beings that looked like "well-developed fetuses", having no clear facial features except for very large, wide-set eyes. Walton panicked and struck out at the beings, then ran out of the room. In another room he encountered a normal human being wearing a blue coverall and a helmet, who gestured to the youth to come with him. He was led into what appeared to be an enormous "hangar" containing several disc-like UFOs. He was led aboard another craft where he saw several other human beings - two men and a woman - likewise wearing blue clothing. There a mask-like device was placed over his face and he knew nothing more until he found himself lying on a highway outside of Heber, five days later, with the UFO departing as though having just left him at the site. Many of the above details emerged during subsequent hypnotic sessions with the witness.⁶

Of all the above reports the last, being widely publicized here and abroad, turns out to be the most highly controversial. The complications are too numerous to include in this summary, but the case is by no means closed. These five examples do provide, however, a fair sampling of the kind of CE III reports with which we now find ourselves grappling. Dr Hynek has described a paradoxical situation:

"We have too many sightings, not too few . . . We are, frankly, embarrassed by our riches".⁷ Likewise, Dr David Saunders, of the University of Chicago, now has close to 90 000 case entries in his computerized UFO catalogue, UFOCat. The data are so plentiful, in fact, that the serious UFO researcher is obliged to select some aspect or portion of the phenomenon to examine in microcosm. Ted Phillips, for example, has chosen Close Encounters of the Second Kind (cases in which ground traces, residues and physical effects have been reported) to examine in detail.⁸ Fred Merritt has

confined his research to an even narrower selection of CE II reports - those trace cases limited to reports in which only leg-marks have been left at the site.⁹ (This includes, of course, some CE III reports as well).

Close-range encounters, then, appear to be the kind of UFO experience with the greatest data-yield potential and the focus of our attention, rather than random night lights of vague and often spurious description. Of the close-range reports, CE III's have been the focus of my own recent research. Reports of humanoid entities, seen most often in association with an unidentified object, are as old as the UFO report itself. For example, while researching newspaper material in libraries around the United States on the first large-scale US wave in 1947, I came upon three CE III's that had been reported in local newspapers and nowhere else.¹⁰ Even though they were scantily reported, with a heavy tongue planted firmly in cheek, I find these early examples especially significant in view of the fact that in 1947 there just was no precedent for this type report. Actually, there were precedents although they were not recalled in the press coverage of "flying saucers" in 1947: 50 years earlier the great "airship" wave took place in the United States and of the hundreds of observations that were reported in the newspapers of 1896 and 1897, more than 50 of these describe "aeronauts" that were seen in association with the airship appearances.¹¹ In my own files currently there are more than 1400 CE III case references from all over the world and dating back to the 1896-1897 wave.

CE III reports, then, also provide us with "an embarrassment of riches". But for a long time, serious researchers and some organizations dealt only gingerly (or not at all) with humanoid reports, and then only after applying usually subjective criteria for acceptance. During the 1960s there was a dramatic increase in the numbers of CE III experiences and researchers (like myself) were compelled to re-examine humanoid reports, often with a sense of frustration and, in some instances, with no little feeling of embarrassment.

Notwithstanding the layman's incredulity to such reports, CE III's are a significant subset of case material to study in that the chance of mis-identification of conventional or natural sources is reduced to a minimum: these are close-range encounters, usually with structured objects of specific detail that often leave traces at the site or produce physical effects upon people and machinery. They can be accounted for in three ways:

- (1) as a hoax (either the witness is lying or he is the victim of someone else's practical joke)
- (2) as a temporary delusion or hallucination - or in the case of multiple witnesses, group psychosis, or
- (3) the experience was real and the witness reports his perception of it as accurately and honestly as he is able.

Another important aspect of the CE III is the fact that the amount of information inherent in such a report (data-yield potential) is considerably more than for UFO cases of vague and ambiguous description. Finally, if we surmise that the phenomena are real, appearing to be structured devices under intelligent control, then it is only logical to assume that on at least some occasions the intelligence that controls these objects must be reported; as this happens to be precisely the case, then the reported "intelligences" should bear our closest scrutiny.

Two additional points must be made: there are many well-documented CE III reports in which credible witnesses have described humanoid figures; preliminary analyses of these reports clearly indicate patterns of recurrent detail. (See, for example, the five cases cited above, in which helmets and rod-like implements appear twice; two abductions occur; memory loss occurs three times; etc). Careful examination of CE III reports and, particularly, the witnesses who make them, can contribute significantly to the clarification of the UFO enigma. It requires thoroughness, objectivity, and a certain degree of skepticism. The approach, until now, has been essentially haphazard with few stringent

guide-lines to follow and in the main we have had to depend upon the resourcefulness of the individual investigator. This "pot-luck" approach is no longer sufficient or appropriate in the collection and analyses of humanoid reports; to secure the detailed information we so urgently need, strict minimum standards of procedure must be adhered to. A valuable step in this direction has been made by MUFON, which now has available, for a minimum charge, a useful handbook for UFO field investigators; this was prepared by Raymond Fowler, MUFON's Director of Investigations.¹²

CLARIFICATION OF TERMINOLOGY

Anyone knowing anything about humanoid reports is aware of the confusion in terminology. One reason, of course, is that each individual researcher has his own ideas not only about terminology, but about orthodoxy as well - that is, which reports are acceptable and which ones should be rejected. For the purpose of clarification, we would like to offer some definitions that are derived from experience and usage and may be helpful and reasonably compatible with the terminology of other researchers.

Reports of humanoid entities seen in association with UFOs are variously described, in the literature, as "occupants", "little men", "aliens", "humanoids", "extraterrestrials", "operators", "beings", "UFOonauts", and other colorful terms. The problems are obvious: not all UFO "occupants" actually occupy the object with which they are associated; nor are the "little men" associated with UFOs always little or always men; not all "humanoids" are human-like in appearance, and while some of them certainly appear "alien", most of us still do not know for certain that they are "extraterrestrial" in origin; nor can we be sure that a "UFOonaut" is actually the "operator" of, or just a passenger aboard, a UFO. They have been called "beings" but we are uncertain that all of them are living organisms, since some are described as robot-like while still others may be nothing more substantial than holograms, or projections of living beings. While there are extravagant variations as to size and shape, there is a consensus that most UFO entities appear as humanoid beings, even though some (such as robots and holograms) may not be actual living organisms. The UFO

entity, then, seems to be the most useful generic term to fall back on. Webster defines entity as: "A being; especially a thing which has reality and distinctness of being, either in fact or for thought". While entity seems the most appropriate generic term, for practical purposes the term "humanoid" applies to the vast majority of reports, and we will at times fall back on that, as in "humanoid report", and "The Humanoid Catalogue".

Another debatable definition involves the words "contact", or "contactee report". They are terms often used interchangeably with "close encounter", and we would like to suggest a more precise usage for them. A close encounter may or may not involve an actual "contact", or some direct interaction, between the percipient and the entity, such as comprehensible communication between the two. Therefore, we would like to reserve the term "contact" for those close encounter cases in which some specific interaction occurs, either physical, or by communication, whether by voice, telepathy or by physical gesture. A "contactee" is, of course, one who makes a "contact" report; however, the term "contactee report" is by now associated with a particular genre of UFO lore in which the UFO "contactee" has repeated "contacts" with extraterrestrials and, further, talks a lot about it. The classic case in point, of course, is George Adamski. It may be appropriate to reserve "contactee report" for this special kind of example; as this already seems to be the case, we have no quarrel with the usage of the term.

The terms "abduction" and "abduction report" pose no real problem of definition. We are, however, faced with the paradoxical situation of having certain features of the abduction case that are similar to some of the claims of the contactees of earlier years - that is - witnesses are claiming to have been taken aboard an unidentified object and even, in some cases, of having been transported to some strange place, presumably the home of the abductors. The similarities are, in fact, only superficial: unlike the contactees of old, who found their experiences spiritually uplifting, more recent abductees have most often been unwilling participants in an experience that was traumatic in the extreme, and one they did not wish to have repeated. Moreover, unlike the contactees, they have not

hit the lecture circuit following their experience, nor sought in any way to exploit it. They want, in fact, only to forget it. Many of the abduction cases have remained unpublicized and the witnesses refuse to allow their names to be used in any published record of the experience.

RECURRENT CHARACTERISTICS OF THE CE III

So far as is known, there have been no comprehensive studies made of all available CE III reports, using computerized techniques. Several extensive studies have been made, using limited data or case material with a broader range of phenomenology. Jacques Vallee, for example, has done a computerized study of close-range reports he classifies as Type I cases, but these are not limited to only CE III reports;¹³ likewise, Vincente-Juan Ballester Olmos has prepared an extensive study of a selection of Type I cases that have occurred on the Iberian Peninsula.¹⁴ To date, the only known study of recurrent features of humanoid reports is Les "Extra-Terrestres" by Jader U Pereira, of Porto Alegre, Argentina.¹⁵ Published in French by GEPA, it is not yet available in English for American researchers.

The observed characteristics of UFO entities can be summarized in three categories:

- (1) the appearance of the entities
- (2) their behavior, and
- (3) the physical effects the experience leaves upon the local environment as well as on the witness.

Both appearance and behavior of entities vary widely, leading some researchers to throw up their arms in dismay at the apparent confusion and contradiction of detail; even so, in spite of these conflicting elements, a careful examination of reports discloses specific and recurrent patterns.

APPEARANCE - The most obvious characteristic of appearance seems to be the size, or height, of the entities, which varies from very small 'under a foot' to gigantic '10 feet or more'. However, three main categories are apparent:

- (1) "dwarfs" that average three to four-and-a-half feet tall
- (2) "normals" of standard height (or slightly under) and
- (3) "giants" of seven feet or more

Vallee classified these categories in 1964¹⁶ and concluded that the behavioral characteristics of each class seemed to be a function of their height. Dwarfs, for example, tend not to be just small, but also appear in pairs, wearing shiny or silver outfits (les "scaphandriers"), often with helmets, and usually have abnormally large, round eyes.

"Normals", on the other hand, tend to appear in groups of three or more, resemble humans more closely, but sometimes have wide-set ("wrap-around") eyes, rudimentary noses and ears, and slit-like mouths. They are most often seen in different colored coverall-type garments. "Giants", while not so numerous in number, seem to have been reported more often in recent years. In some of these cases, they are described as being particularly ugly and, in several instances, have been described as having only one eye.

Jader Pereira has refined Vallee's three basic types and has devised an elaborate and definitive classification of humanoids based not only on size and appearance, but on behavior as well; his basic types number 12, with variable sub-types within each group.¹⁷

A curious feature of many reports is the apparent absence of distinctive facial features, in spite of the reasonably close proximity of the witness to the entity, and detailed descriptions of other bodily features. (See, for example, the Wauwatosa case, cited at the beginning of this paper). Although not always clearly observed, hands of the entities are most often reported to be normal, although there are a growing number of cases reporting the presence of only three or four digits. Claws have been reported in a number of cases, usually as seen on dwarfs; in a few cases (Pascagoula, for example), the hand is replaced by a two-digit, claw-like appendage.

There are a few examples of entities that are clearly reported in detail that seem to be entirely unique in appearance, turning up once and never again (to our knowledge) reported: two of these are the entities reported at Branch Hill, Ohio, in May 1955, and at Kelly, Kentucky, the following August (the now-famous "Hopkinsville" case). Entities appearing more "robot-like" than living beings have been described in numerous instances: a classic example of this type is the Cisco Grove, California, "robot" (seen in association with several humanoid types of being, encountered by bow-and-arrow hunter Donald Shrum in September, 1964.

BEHAVIOR - This is a difficult category to define, since we must base our classification on the apparent, or implied, behavior of the entities. A wide variety of behavior has been reported, much of it inconsistent and perplexing, some of it absurd and manic. It is always possible that what the witness perceives to be happening is not what is occurring at all. Many close-encounters with humanoids have an extraordinarily "staged" quality about them, with the implication that their apparent behavior was contrived for effect.

Encounters seem to fall into two general categories - intentional and unintentional. In many instances the witness will "happen" upon a situation in which the entities are "discovered" and then make a hasty "escape" in their UFO, as though they had been caught at something that ought not to have been seen. This "discover and escape" behavior has a distinct quality of disingenuity about it: a UFO and its crew, for example, sitting in the middle of a back road at night would certainly be aware of the noise and lights of an approaching car in time to get away, if they did not want to be observed. To behave as though taken by surprise when, at the last minute, the lights of the car fall upon them implies that they damn well wanted to be seen, despite their hasty departure. A classic example of this "discover and escape" scenario (although a daylight sighting) is the encounter at Socorro, New Mexico, in April 1964 by Police Officer Lonnie Zamora.¹⁸

ACTIVITIES - There are a number of distinctive activities engaged in by entities that witnesses describe again and again. "Sample gathering" is one of these: beings are described picking up stones and rocks, or pulling up plants and depositing them in handy carriers. A classic example of this activity is found in a CE III that occurred just across the Hudson River from New York City in North Bergen, New Jersey, in the early morning hours of January 1975: As the witness drove his car into North Hudson Park, he saw an object swoop down from behind and land in a field next to the road just ahead of him. Driving slowly by, he observed 8 to 11 small entities emerge, each with little spades and bags, and commence to dig up soil samples, after which they quickly re-boarded the UFO which then took off swiftly and silently, leaving the witness utterly flabbergasted.¹⁹ Another distinctive activity often described by witnesses is what appears to be a sort of "repair operation" undertaken by the entities on their vehicle. A detailed account of this type of activity is found in the New Berlin, New York, landing report of November 1964, in which two women watched for four hours as the crews of two UFOs made elaborate repairs on a unit removed from the bottom of one of the objects.²⁰

ATTITUDES OF THE ENTITIES - Utterly inconsistent is the description that best applies to the attitudes displayed by entities toward the witnesses in CE III reports. In many cases the beings remain entirely oblivious to the presence of the witness (as in the North Bergen case, cited above); at the other extreme are those reports in which objects are seen to land from which emerge entities who purposefully approach the witness, with a direct interaction between the two occurring. Following this brief "direct confrontation", sometimes involving attempts at communication (often unintelligible), the entities re-enter their UFO and take off: mission completed. Cases in which the witnesses' presence is acknowledged by the entities fall into two general categories - passive and active interaction. The "discovery and escape" situation is passive recognition of the witness coming on the scene, whereas the "direct confrontation" is an example of active interaction. Abduction cases, of course, are a dramatic example of active interaction between percipients and UFO entities.

OTHER DISTINCTIVE FEATURES OF BEHAVIOR

Disappearing entities are not unusual, and the ability to fly and/or to float is a detail found in numerous cases. An early example of the "disappearing" entity was the encounter by multiple witnesses in a gravel-pit at Marcilly-sur-Vienne, France, on September 30, 1954, when the being under observation was reported to have "dissolved" in front of the witnesses' eyes; not only that, but the UFO, hovering overhead, also vanished by emitting a heavy fog which, upon dissipating, showed no sign of the object at all.²¹ Floating appears to be an efficient method of egress and entrance by entities to and from objects hovering overhead, and has been reported on numerous occasions. The ability to float turns up in cases in which no UFO is directly involved: the classic example of this feature can be found in the Kelly, Kentucky, encounters by a farmhouse full of people in August 1955 (the famous "Hopkinsville Report");²² in a more recent case, a pair of small silvery beings was reported by multiple witnesses at Hartford City, Indiana, on the night of October 22-23, 1973, and in the final observation of the series the entities were seen rising up off the ground and ascending into the night skies, finally disappearing from view.²³ Flying entities, in a variation of floating abilities, can be traced back many years. There were a number of "flying men" reports that came from the state of Washington in the early months of 1948. In some instances they have been reported wearing wing-like contraptions and in others there seems to be no need for contrivances such as these. More recently, during August and September 1967, there were a number of reports from Venezuela of "flying humanoids" of small stature; some accounts described the entities entering upper-story windows of homes and apartments. Some were seen in association with UFOs, others simply "flew off" into the night-time sky, graceful as birds. There is a certain incredulity that lingers about such reports, as can be understood; even so, the accounts exist as reports and are by no means unique, and they must be considered along with other equally unlikely behavior that reoccurs in CE III cases.²⁴

ASSOCIATION WITH VEHICLES

Specific and continued interest in vehicles has been evident in a large number of reports from the earliest period. (See, for example, the five cases cited at the beginning of this paper, of which four involved witnesses who were driving trucks or cars at the time of the encounter). Many CE II and CE III cases include electrical failure of the car's motor and lights which become operative once again upon the departure of the UFO. It is interesting to note that of the 70 "wave" reports documented by David Webb in his report, 1973 - Year of the Humanoids²⁴ (from the period September through December), 25 incidents involved witnesses in or associated with vehicles - more than a third of the cases for that period. Electromagnetic effects were reported in ten of these cases.

PHYSICAL EFFECTS

As noted above, physical effects associated with CE II and CE III reports include not only electrical failure of automobile lights and engines but affect electrical appliances and lights in homes, as well. Physical effects occur in UFO witnesses, also: in many cases the witness reports a feeling of dizziness or light-headedness, or a "prickly" sensation when in the close proximity of a UFO; in other cases, witnesses have been completely immobilized during the encounter, sometimes as the result of having a beam of light shine on them either by some implements carried by the entity, or from the UFO itself. Animals react to the close proximity of UFOs in various manners. There are a number of cases, particularly those in which the abduction occurs, when the witness is subject to effects that occur after the encounter is concluded. In some of these cases the psychological effects of the situation have been severe enough to create psychological problems requiring professional treatment, as with the famous Betty and Barney Hill abduction in 1961. We have already mentioned cases in which ground traces, residues and scorched vegetation have been noted at the sites of UFO landings.

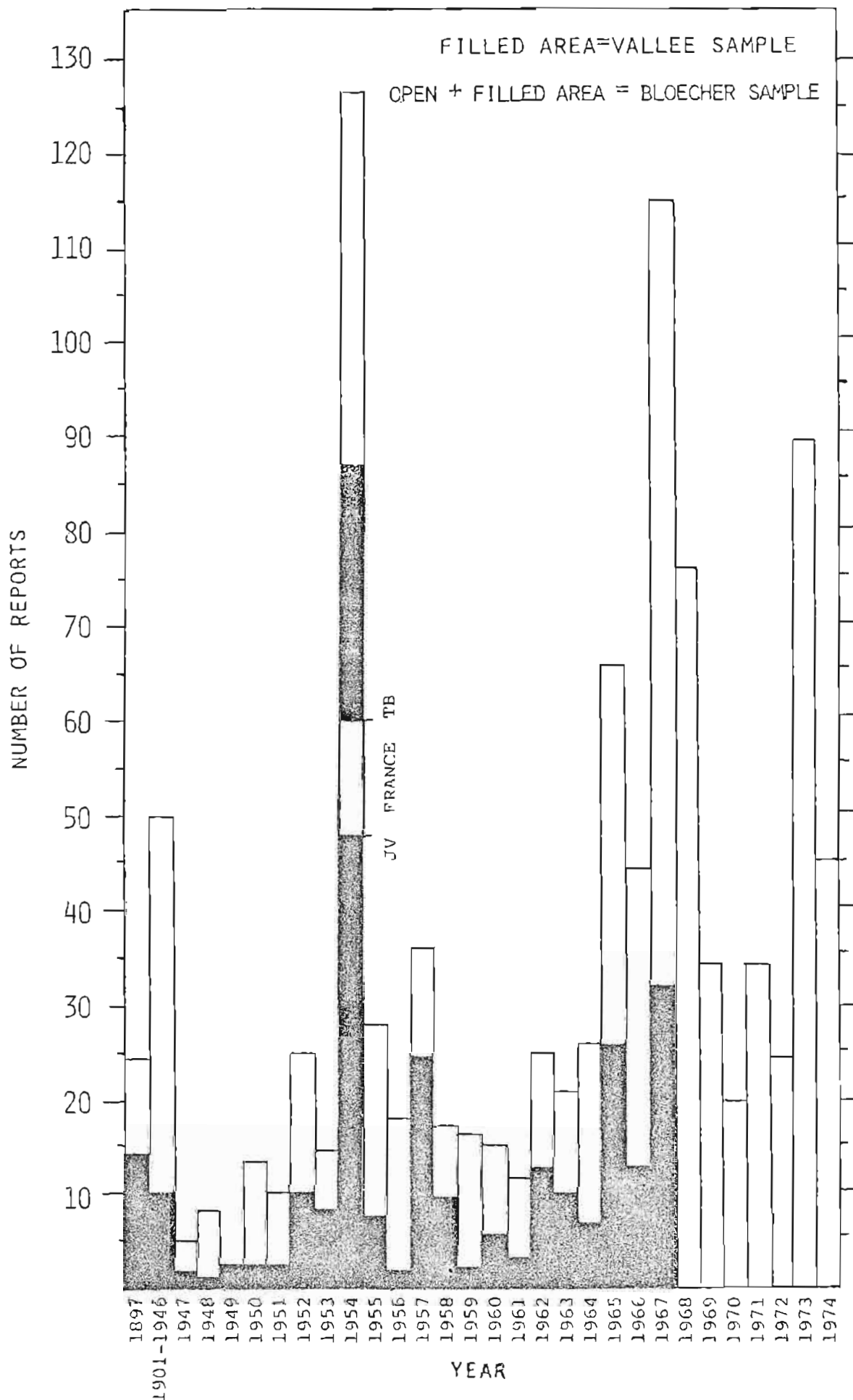
COMMUNICATION

Comprehensible communication reportedly taking place between UFO entity and witness is perhaps one of the most significant features of CE III reports, and an accurate record and analysis of "messages" and the manner in which they are delivered, no matter how absurd the content, can provide some important clues about the phenomenon. As has already been mentioned, intelligible communication can be verbal, telepathic, or by gesture. Verbal communication is most often delivered in the native tongue of the percipient, sometimes articulately and sometimes in a jumbled mixture of comprehensible and nonsensical words. On occasion, messages have had a nonsense content that borders on the bizarre: for example, during the spate of CE III reports in Venezuela in 1967, one percipient was told, upon being accosted by a diminutive humanoid, that "the earth was cracking" and "they" were here to save the human race.²⁵ The classic non-sequitur delivered by a UFO entity occurred in France in 1954: asking the witness where he was, the UFO naut disputed the answer by insisting he was elsewhere; likewise, upon being told the time, he disputed this piece of information as well.²⁶ To take such messages at face value, of course, can be a risky business, for it appears that in certain cases, at least, the entity is lying. While all of these so-called "messages" need to be carefully collected and analysed, their contents must be viewed with a healthy degree of skepticism. These reports underscore the need to know as much about the witness himself as we need to know about the contents of messages by the entities.

CE III REPORTS AND WAVE PATTERNS

CE III reports correlate well not only with other close encounter cases but tend to follow wave patterns both in terms of yearly and geographical distribution. The UFO waves of 1947, 1950 and 1952 were early waves showing increases in CE III reports simultaneous with peaks of UFO sightings in general. It was not until 1954 that the first truly massive number of CE III incidents was reported, and this occurred during waves of UFO sightings in Europe and in South America. Another wave of

FIGURE 4 - YEARLY DISTRIBUTION OF HUMANOID REPORTS



From David Webb's Report, 1973 - Year of the Humanoids

(CUFOS Publication, 1976)

UFO reports in 1957 was accompanied by another increase of CE III reports, although not on the same scale as that of 1954. It was not until the mid-1960's that large-scale numbers of reports, on the order of those from 1954, were once again evident; these were concurrent with the massive UFO waves that took place between 1965 and 1968. 1967 for example, produced more CE III reports than 1954, but these tended to be distributed over the entire year, with moderate peaks in March (in the United States) and in August and September (in South America). The two most massive wave-peaks occurred in 1954 and in the fall of 1973, in the United States. The latter is described in detail in an excellent report by David Webb, 1973 - The Year of the Humanoids.²⁷

ASSOCIATION OF ENTITIES WITH OBJECTS

The precise relationship of the UFO entity with the vehicle that presumably bears it has not always been carefully specified and I would like to propose a method of classification that researchers may find helpful in the analysis of exactly what types of experiences occur under what specific relationship of entity to UFOs. It has been my suspicion that a number of different sources may be involved in reports of entities and other strange and unidentified beings: for example, some entity reports appear to be more akin to ghostly manifestations; others appear to involve troll-like beings belonging to the realm of earth-folk lore; still others may be representative of that large and hairy hominid, the mysterious Bigfoot. The line between these and other entities that are directly associated with UFOs is not a very clear one, and by classifying the association of entity to the object that purportedly bears it should be helpful in making more meaningful distinctions. The classification that I suggest is as follows:

- TYPE A Entity is observed inside the object only (the true occupant), through doors, ports, windows, transparent dome, etc. The association is explicit.
- TYPE B Entity is observed getting into and/or out of an object (the "egressed" occupant). The association is still explicit.

- TYPE C Entity is seen in the immediate vicinity of an object but is not actually seen entering or leaving. Association is implicit.
- TYPE D Entity is observed independent of an object, but there is UFO activity occurring in the area at the time, usually reported by other sources. Association is circumstantial.
- TYPE E Entity is observed independent of an object and there is no record of UFO activity in the area at the time. Association is negative.
- TYPE F Neither entity nor UFO (or, in some cases, only a UFO) is seen, but the percipient experiences some manner of communication (by psychic experience, automatic writing, etc), hears "voices", or receives "messages".
- TYPE G Percipient has an "on-board" experience, either voluntarily or as an "abductee". Entities may or may not be physically present, but the involvement of "other intelligences" is at least implicit.

RATING AND CREDIBILITY

The credibility of CE III reports depends not only upon the character and reliability of the witness but upon the objectivity and thoroughness of the investigator, in his final report on the experience. The contents of such reports no longer depend upon their contents as an index for reliability, for we are apparently dealing with experiences that seem to transcend the reality with which we are familiar. Therefore, we have an urgent need to know as much about the person reporting these strange events as it is possible to know; likewise, we must depend upon competent and knowledgeable investigators to provide this information. Complete documentation of every CE III event is essential if we are to ever unravel this mystery; unfortunately, our files are filled with reports that simply do not meet the minimum requirements for meaningful analyses. Older reports, in particular, exist merely as incomplete notes or unchecked newspaper clippings. It is necessary to sort out the dreck and concentrate our studies on the cases that will provide the maximum data yield. In the process of sorting out reports that provide the most useful and reliable data, we are subject to our own personal biases and pre-dispositions about what constitutes "good data". Even so, there are objective criteria that can provide a general consensus among most responsible researchers about what cases should be getting priorities.

Completeness of the investigator's report, including information not only about the reported experience but about the background of the witnesses themselves, provide the basic ingredients with which to rate individual cases.

The method I've employed is use of a 0 to 9 scale, with the lower point representing the weakest reports and the higher the best. Therefore, an absolute 0 rating applies to those reports that are known to be hoaxes or mistakes. The case with a rating of 9 would be the strongest possible report with indisputable evidence of genuine phenomenology. Assuming there is a 50-50 chance for a particular report to be genuine, a score of 5 may be applied at the outset and then modified as additional information is made available. A case of suspected hoax, or one in which a witness's testimony is clearly unreliable, can be reduced to a score of 1 or 2; those reports that may be genuine but for which sufficient data remain elusive may have a score of 3 or 4. Cases with especially complete information may be sixes or sevens, and multiple-witness reports can, for example, rate an extra point on that basis alone. Knowledge about the investigator is also an important factor about whether a point can be added to or must be taken away from the rating. These are subjective factors, of course, but in the end the researcher has essentially only his own common sense to rely upon in making his judgments. It might be helpful to consider any rating as only temporary, at best, and subject always to re-assessment upon the receipt of new material. When the process of rating the cases has been concluded, based upon all the available material on each case, the researcher can then choose his own average score of all cases to determine which ones constitute the best possible sample of information. For example, one might consider all cases of 5 or higher as an appropriate sample for study.

The method is not fool-proof and there can be violent disagreements among researchers about certain reports; on the other hand, it is a reasonable way to establish the degree of importance of case material, and I have found from my own experience that there is a consensus among researchers in this method of rating CE III reports.

THE HUMANOID STUDY GROUP AND HUMANOID CATALOGUE

The Humanoid Study Group, in which I share the co-chairmanship with David Webb, is a loosely-organized group of interested participants closely associated with the Mutual UFO Network (MUFON)²⁸ and the Center for UFO Studies.²⁹ We depend essentially upon the interest and assistance of many members connected with these two organizations to provide first-hand information of CE III reports. The HSG case files have grown out of what essentially was my own collection of humanoid reports from many years. With the co-operation of other researchers and investigators and, particularly, with new contacts amongst organizations abroad, the HSG files have more than doubled in the last two years.

Most of our effort thus far has been given over to the collection of CE III reports. Data acquisition is only the first step of CE III research: data reduction and organization are essential in dealing with large quantities of material. Researchers must have ready access to logically prepared information; with the valuable assistance of Dr David Saunders and Richard Bonenfant, we are now in the process of organizing the HSG case material into computer-retrievable form. Only after this step is completed can any meaningful analysis of CE III reports be carried out. There is still much work to be done.

The Humanoid Catalogue is a chronological listing in summary form of all HSG files covering the years between 1896 and the present. The preliminary listing of HumCat (as we call it) has been completed, with the untiring help of veteran UFO researcher Lex Mebane. An inventory of HumCat currently includes nearly 1300 reports for the 70-year period. (See Statistical Breakdown by year of reports). Approximately half of these are from North America (the United States and Canada); the balance from the rest of the world. Brazil and France follow with the next-highest number of reports per country, each with just under a hundred. There are gaps in the representation of foreign CE III reports but valuable new contacts overseas are beginning to fill them.

I am, therefore, especially pleased at this time to have been invited to address this impressive assemblage of British UFO researchers. The mutual exchange of information that results will be enormously valuable to all of us whose imagination has been caught by this fascinating subject.

STATISTICAL BREAKDOWN

Year	North America			South America				Europe			Afro-Asia		S.W. Pacific			Totals			
	Can	Mex	USA	Arg	Br	Vz	Oth	GB	Fr	It	Sp	Oth	Afr	Asia	Aus	NZ	Oth	Sub	Grand
196-97	-	-	54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	
1900-09	-	-	4	-	-	-	-	9	-	-	-	-	-	1	-	4	-	18	
1910-19	2	-	3	-	-	-	-	1	-	-	-	1	1	-	-	1	-	9	
1920-29	3	-	4	-	-	-	-	1	-	-	1	-	-	-	-	-	-	9	
1930-39	2	-	2	-	-	-	-	-	-	-	2	3	-	-	-	-	-	9	
1940-44	-	-	2	-	-	-	-	4	1	-	-	1	-	-	-	1	-	9	
	7	0	69	0	0	0	0	15	1	0	3	5	1	1	0	6	0	108	108
1945	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	2	
1946	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2	
1947	-	-	3	-	1	-	-	-	1	1	-	-	-	-	-	-	-	6	
1948	2	-	7	-	1	-	-	-	-	1	-	1	-	-	-	-	-	12	
1949	-	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	3	
	2	1	12	0	2	0	0	0	3	2	0	3	0	0	0	0	0	25	133
1950	1	1	7	2	-	-	-	-	2	1	-	1	-	-	-	-	-	15	
1951	-	-	5	-	-	-	-	1	-	-	-	2	-	-	1	-	-	9	
1952	-	-	16	-	2	-	1	1	1	3	-	1	-	-	-	-	-	25	
1953	1	1	7	1	2	-	-	-	1	-	1	1	-	-	-	-	-	15	
1954	3	-	10	2	9	7	-	2	60	16	2	6	4	3	1	-	-	125	
	5	2	45	5	13	7	1	4	64	20	3	11	4	3	2	0	0	139	322
1955	-	-	25	-	-	-	1	2	3	-	2	1	-	-	-	-	-	34	
1956	-	-	12	-	3	-	-	2	-	-	-	-	1	-	-	-	-	13	
1957	-	-	22	2	6	1	-	3	1	1	-	1	-	-	-	-	1	38	
1958	-	1	5	1	3	-	1	2	-	1	-	2	-	1	-	-	-	17	
1959	-	-	5	-	4	-	-	2	-	-	-	2	-	-	1	1	2	17	
	0	1	69	3	16	1	2	11	4	2	2	6	1	1	1	1	3	124	446
1960	-	-	5	1	1	-	-	-	2	1	-	3	1	2	1	-	-	17	
1961	1	-	10	-	2	-	-	-	-	1	-	-	-	-	1	-	-	15	
1962	1	-	4	5	3	-	-	-	1	7	-	1	-	-	2	-	-	24	
1963	1	-	8	3	2	-	-	1	-	3	1	1	2	1	-	-	-	23	
1964	-	-	16	3	1	-	1	5	1	-	-	-	-	1	3	-	-	31	
	3	0	43	12	9	0	1	6	4	12	1	5	3	4	7	0	0	110	556
1965	1	5	22	11	7	2	13	9	1	-	-	1	-	-	1	-	-	73	
1966	2	-	59	4	-	1	3	2	-	1	2	1	-	-	-	-	-	75	
1967	8	2	66	1	7	14	3	7	7	-	6	2	-	-	2	-	-	125	
1968	14	-	24	16	11	-	5	4	1	1	12	1	1	1	3	1	4	99	
1969	3	-	11	3	14	-	1	2	1	-	4	1	-	1	2	1	-	44	
	28	7	182	35	39	17	25	24	10	2	24	6	1	2	8	2	4	416	972
1970	2	1	6	-	4	-	2	-	1	-	2	3	1	-	-	-	1	23	
1971	1	1	12	1	8	1	-	4	-	-	1	4	-	-	4	-	-	37	
1972	2	1	9	9	-	-	-	1	-	-	-	6	4	-	5	-	-	37	
1973	4	2	70	3	3	-	1	1	2	2	-	4	1	1	3	-	-	97	
1974	2	1	29	4	3	1	-	6	4	1	6	3	2	1	1	-	-	64	
	11	6	126	17	18	2	3	12	7	3	9	20	8	2	13	0	1	258	1230
1975*	3	-	34	1	1	-	-	-	-	-	-	-	2	1	1	1	-	44	
1976*	-	-	21	-	-	-	-	-	1	-	1	-	-	1	-	-	-	24	
																		68	1298

* Pending receipt of additional material, 9/15/76.

NOTES

- (1) Hynek, J Allen. The UFO Experience - A Scientific Inquiry, Henry Regnery Company (Chicago, 1972). See Chapter 10 "Close Encounters of the Third Kind".
- (2) Undated letter from the witness to the Center for UFO Studies, received in the first week of November 1975. Courtesy of CUFOS.
- (3) Personal letter from the investigator, John B Musgrave, July 18, 1976; Edson (Alberta) Leader, October 15, 1975. Newspaper clipping and notes on his investigation courtesy of Mr Musgrave.
- (4) Wauwatosa (Wisc) Post, March 8, 1976; copies of taped interview with the witnesses by investigator Richard Heiden, April 3, 1976, courtesy of Mr Heiden.
- (5) Erickson, Al. "Under Hypnosis, Youth Tells of Time on UFO", Peabody (Maine) Times, March 3, 1976; Niss, Robert S. "The Stephens Abduction in Oxford, Maine", Official UFO 1-9 (July 1976), 20-21, 46-48; copies of the taped hypnotic sessions with the primary witness by Dr Herbert Hopkins, courtesy of CUFOS; copies of the original police report and the results of a first-hand inquiry by Mrs Shirley Fickett on November 11, 1975, courtesy of CUFOS; letter of investigator Al Erickson to Raymond Fowler detailing results of his inquiries, dated February 27, 1976, courtesy of Mr Fowler.
- (6) Numerous press clippings from the Phoenix Arizona Republic, November 6-12, 1975; Associated Press report by John Halvorson from Snowflake, Arizona, Tucson (Ariz). Daily Star, February 16, 1976; APRO Bulletin, November 1975, 1-5; op. cit., December 1975, 1 and 3; op. cit., February 1976, 1 and 3; MUFON Skylook, December 1975, 3-7; op. cit., February 1976, 5-7; op. cit., March 1976, 11-12; op. cit., April 1976, 7-9; Jordon, Raymond. "The Travis Walton Case", Official UFO 1-9 (July 1976), 22-23, 48-52; &c.
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- (8) Phillips, Ted. Physical Traces Associated with UFO Sightings, published by CUFOS, 1975.
- (9) Merritt, Fred. "A Preliminary Classification of Some Reports of Unidentified Flying Objects Based on Shape and Dimension of Imprint Patterns", paper delivered by Mr Merritt at the CUFOS Conference, Lincolnwood, Illinois, May 1, 1976. To be published in the Conference Proceedings, scheduled for release sometime in Fall, 1976.

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- (11) For details of many of the "Airship" reports, see Jacobs, David M., The UFO Controversy in America (Indiana University Press, 1975), 5-34 (Chapter 1, "The Mystery Airship"); Clark, Jerome, and Coleman, Loren. The Unidentified (Warner Paperback, New York, 1975), 131-164 (Chapter 4, "The Airships; the Technological Impulse"); Keel, John. UFOs - Operation Trojan Horse (G P Putnam's, New York, 1970), 78-103 (Chapter 5, "The Grand Deception").
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- (13) Vallee, Jacques. Passport to Magonia (Henry Regnery Company, Chicago, 1969).
- (14) Ballester Olmos, Vincente-Juan. A Catalogue of 200 Type I UFO Events in Spain and Portugal (published by CUFOS, Evanston, III., 1976).
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- (16) Vallee, Jacques. "A Descriptive Study of the Entities Associated with Type I Sightings, Flying Saucer Review X-1 (Jan-Feb 1964), 6.
- (17) Pereira, Jader U. Op. cit., 3-23
- (18) A recent book published on this case provides a complete account of the NICAP investigation, as well as some new and provocative information not known before. See Stanford, Ray. Socorro 'Saucer' in a Pentagon Pantry (Blueapple Books, Austin, Texas 1976).
- (19) Investigation by the author in association with Budd Hopkins and Gerard Stoehrer. A complete report on the incident will be published soon in Flying Saucer Review.
- (20) Bloecher, Ted. "UFO Landing and Repair by Crew," Flying Saucer Review XX-2 and 3 (1974), 21-26 and 24-27

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- (21) Vallee, Jacques. Passport to Magonia, 68-69
- (22) A complete report on investigations of this case by Isabel Davis and Bud Ledwith has existed, unpublished, for more than 20 years. I am pleased to be able to say that this excellent report, revised and expanded to include information obtained since its preparation, will be published by the Center for UFO Studies some time in the near future. Please contact CUFOs for details.
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- (24) Webb, David. 1973 - Year of the Humanoids (second edition published by the Center for UFO Studies, Evanston, Illinois, 1976). Interested parties are urged to contact CUFOs for copies of this excellent report.
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- (28) The Mutual UFO Network (MUFON), Walter H. Andrus, Jr., Director. 103 Oldtowne Road, Seguin, Texas 78155.
- (29) The Center for UFO Studies (CUFOs), Dr J. Allen Hynek, Director. 924 Chicago Avenue, Evanston, Illinois 60202.

THE VEHICLE INTERFERENCE EFFECT

By

Anthony R Pace

The following paper gives a brief insight into some aspects of BUFORA's current project concerned with the reported effects on motor vehicles involved in UFO encounters. Because we are dealing with a global phenomenon our sample of some 400 cases is taken from many different countries of the world.

THE VEHICLE INTERFERENCE EFFECT

It is interesting to note that yesterday was the 9th anniversary of an incredible UFO encounter, which has become one of the most significant cases of its type recorded throughout the world.

In the early hours of Monday morning 6th November 1967 between 1.00 and 2.00 am Carl Beverley Farlow was driving his Leyland Super Comet diesel lorry down the A338 between Avon and Sopley on his way to deliver a consignment of Aga Cookers to a central heating firm at Christchurch near Bournemouth. It had been raining earlier but now the weather was fine and cool.

As he approached a crossroad with a bridge over the River Avon on his right the headlights of the lorry began to dim, and within a few seconds had gone out altogether. He pulled up quickly with his engine running. It was then that he first noticed a large egg shaped object moving slowly across the road from the right. He estimated its height above the ground to be that of a telegraph pole and by comparison with the bridge its length was some 80 feet. By now the object was hovering quite motionless partly above the scrub land on his left and completely covering the road ahead.

He described the colour as magenta with a whitish area at the bottom and through the open window of the cab he could hear a continuous humming sound not unlike a domestic refrigerator. For several minutes he sat there petrified. There was a strong, pungent odour similar to the smell of an electric drill drilling through wood. His first impression was of a massive electrical fault on the lorry. The object then began to move off to the left, slowly at first, then accelerating at a moderate angle to disappear in seconds. It was then he became aware that another vehicle was also involved.

A cream coloured Jaguar travelling in the opposite direction had driven up to the hedge bank. The UFO had apparently moved between the two vehicles. The Jaguar driver, a veterinary surgeon, came over to Mr Farlow who was still sitting in his cab, and suggested

that they phone the police. Both his engine and lights had malfunctioned as the UFO approached and his passenger, a young woman, had become hysterical. Fortunately, there was a telephone box between the two vehicles and the local and Christchurch police were soon on the scene. According to Carl Farlow the light which normally illuminated the telephone kiosk was not functioning and when the vet attempted to use his torch this would not work either although he had used the same torch earlier the previous evening.

From the lights of the police vehicles Carl Farlow was able to see that the scrub land and hedge over which the UFO had hovered appeared brown and blackened. The road over which the UFO had passed had a shiny appearance as though the tarmac surface had been melted. Both men were then taken to Christchurch police station where they were questioned separately and statements were taken until about 4.30 am. The woman passenger was treated for shock at a local hospital where she was kept overnight. The police arranged for hotel accommodation and later in the morning the men were taken to the police station, this time at Bournemouth, where they were interviewed by a man from the Ministry of Defence.

In order to collect some personal effects Carl was driven back to Ringwood by the police on the A338 and passed the very spot where he had encountered the UFO. As he went by the bridge he saw a man with a theodolite and another with a geiger counter taking measurements along the road. In the field where the scrub land had been blackened a small bulldozer was levelling the ground and a man was repainting the telephone kiosk. According to Farlow on a subsequent trip to the Bournemouth area, about a week later, he found that the road had been resurfaced with tarmac for approximately 200 feet from the bridge where the incident had occurred.

On Tuesday lunch time Carl picked up his lorry from the police compound at Christchurch and was told by the engineer that all the electrics were out of commission. He was given a tow by an army truck to start the vehicle. Travelling only by day he

eventually returned to the haulage contractor's depot in Shropshire. The lorry was immediately taken to an auto repair garage for examination. Apart from the harnesses, ie the main cables, the rest of the electrical system was virtually useless. This included the dynamo, starter motor, regulator, ammeter, some light bulbs and the four 6 volt batteries, which had been newly fitted to the lorry 4 months earlier, and this resulted in a £400 repair bill.

This then is a prime example of a UFO event involving interference with motor vehicles. But one can see immediately the added significance of the Carl Farlow case. It is one of the very few reports where two vehicles, one petrol driven and the other a diesel, came under the influence of the same phenomenon simultaneously with differing results. Although both lighting systems had malfunctioned, the diesel engine continued running while the Jaguar had stalled. These circumstances, which have been recorded before, for example at Forni in Italy in November 1954, provide researchers with a major clue to the nature of the mechanisms responsible for the characteristic UFO effects on motor vehicles.

As you know BUFORA is at present undertaking a study of vehicle interference cases with the aim of producing a project report as soon as possible.

This project was adopted by the BUFORA Research Department, as a continuation of a smaller independent study begun several years ago by Geoffrey Falla, a member from Guernsey. Mr Falla has continued to play a key role in the project by summarising all relevant cases extracted from the reference sources.

Our preliminary aim is to produce a basic catalogue of summarised cases involving motor vehicles and other devices using the same motive power. These include aircraft, trains, boats and fixed engines, driving such things as generators. The project report is to be published along similar lines to the Physical Traces Catalogue produced by Ted Phillips in the USA except that we will include other sections as indicated below:-

CONTENTS

- (1) Foreward
 - (2) Introduction - a list of considerations
 - (3) Catalogue of Case Summaries
 - (4) Case Studies - two or more fully documented cases, eg Carl Farlow - 6.11.67
 - (5) Statistics
 - (6) Comments from BUFORA project team
 - (7) Resume - Conclusions and Recommendations
 - (8) Appendices - Motor Vehicle Questionnaire
Work of Other Researchers eg Cramp
- Drawings, Diagrams and possibly photographs will be included

In the literature there must be several thousand cases where a UFO has been witnessed from a motor vehicle (or aircraft/boat/train). These cases could be categorised as follows:-

- (1) Cases where the occupants of the vehicle simply observe a UFO at a distance which performs in such a way as to indicate no deliberate interest in the vehicle or its occupants. No effects of any kind are recorded.

- (2) Cases where there seems to be a definite interest because the UFO follows, leads or paces the vehicle, though no effects are recorded or reported. In this category the UFO may come very close and even hover above the moving or stationary vehicle without apparently causing any effects!
- (3) Cases where the circumstances described are as in 1 or 2 but effects are recorded though not "E-M" (Electromagnetic) effects to the vehicle itself, ie Physiological effects on the occupants - burns, a feeling of weightlessness, numbness, "electric shock", paralysis etc., and other physical effects to the vehicle such as involuntary movement, buffeting, scorching of paintwork, change in colour of paintwork, physical damage etc.
- (4) Cases similar to 3 with or without Physiological/Physical effects, where the vehicle's engine and/or lights (and often radio) are effected in some way ie the so-called "E-M" effects are recorded.

The preliminary project draws its information from the cases falling into categories 3 and 4. In a second project report it is hoped to include those cases which fall into categories 1 and 2 also. This may not at first seem relevant to the study of vehicle interference effects but taking the situation as a whole one might ask why no effects are recorded or reported when the UFO is in close proximity to the vehicle? This then presents an additional problem in the study of "E-M" effects on vehicles. The project is a comparative study of the "E-M" effect characteristic of UFOs principally in relation to motor vehicles and is conducted on a global scale to give meaningful results. The number of cases already included has now passed the 400 mark and it is plainly obvious that there must be many more reports of the types described in categories 3 and 4 which remain undiscovered in the literature and on the files of UFO investigation organisations throughout the world.

This latent pool must be tapped and every consideration is being given to ensure that we pick up a high proportion of these potential cases.

What sort of a problem are we dealing with and what are the effects reported in this type of case that we must try to account for?

Of the 400 cases in our preliminary sample the following has been noted:

- (a) 250 reports described engine malfunctions of which the majority were of a temporary nature only. In most cases the engine had to be restarted by the witness, but in a small number of reports, although the engine had failed, it began running again when the UFO left, without any action being taken by the driver.

In a relatively small number of cases more severe and permanent effects were reported, such as fuses blown, wiring and contact points burnt out, and batteries dead.

In the Carl Farlow case, of course, the starter motor, dynamo, ammeter, and regulator had to be renewed completely.

- (b) In 125 of the cases a malfunction of the vehicle lights was reported and again in the majority of cases this was only of a temporary nature.
- (c) Approximately 25% of the cases from our sample display some form of physiological effects with or without engine malfunction. Typical effects described by the vehicle occupants were:-
 - (i) Change of pressure in the ears
 - (ii) Hair stood on end - the air was full of static electricity producing shocks
 - (iii) Weakness in the legs
 - (iv) Immobility and paralysis
 - (v) Temperature increases - waves of heat

- (vi) Painful pricklings and tinglings
- (vii) Fainting and loss of consciousness
- (viii) Lack of air - feeling of vacuum
- (ix) Cooling effects
- (x) Sunburn effects on skin

(d) Other physical effects included:-

- (i) Watches slow or stopped
- (ii) Vibration of metal objects
- (iii) Radioactive traces on car
- (iv) Bending of headlight beams
- (v) Temporary colour change in vehicle paintwork
- (vi) Car body heated
- (vii) Car body transparent
- (viii) Another interesting characteristic reported in a few cases was one of involuntary movements caused to motor vehicles, such as violent rocking, being thrown off the road, lifted and set down again, and physically transported for many miles (Rhodesian, case of 31.5.74)

(e) Humanoids, of one form or another, either inside or outside the UFO, featured in about 60 of the 400 cases studied.

(f) In one instance it was first thought that at last a case had been discovered where a diesel engine had been discovered where a diesel engine had been directly affected in a UFO encounter. A report appeared in the APRO Bulletin of May-June 1969 as follows:-

"STRANGE OBJECT SIGHTED IN ALASKA

A well-written and detailed feature article appearing in the Juneau, Alaska DAILY EMPIRE for the 4th of January 1969 included some very interesting sightings which took place in the vicinity of Hawk Inlet on the 15th and 16th of December 1968. The following is a condensation of that information:

Ken Marlowe, owner of the cargo boat Teel and Ralph Kern reported seeing a "pure white light" - ball shaped and about 20 feet in diameter with two brightly glowing 4-foot diameter globes above it - while at Hawk Inlet at 3.30 pm on the 15th. When first seen, Marlowe passed it off as a reflection from an icy bluff or an aluminum boat but was soon observing it more

closely when he noticed that it had begun to move slowly toward his boat. Using binoculars, Marlowe watched it but could not identify it. By 7 pm the ball was floating on the water within a quarter mile from the Teel, then suddenly rose out of the water and slowly flew out of sight over a nearby mountain ridge.

At 6 pm on the following evening (the 16th) Marlowe and Kern were docking the Teel at the cannery at Hawk Inlet, and it was snowing. As Marlowe was preparing the evening meal he looked out into the snowstorm and saw the same mysterious light again, this time moving slowly in the direction of the cannery from about half a mile distance. When the ball had hovered within a few yards of the dock, Marlowe called the marine radio operator in Juneau. It took about 30 seconds to reach the operator and by the time he did, the object was directly above the Teel's mast at a height of about 70 feet above the deck, the mast being 40 feet tall. Both men were apprehensive the object made no sound, and just as Marlowe flipped the switch to contact the operator the object dipped in the air. Meanwhile, the marine operator had connected the line with Elmendorf Air Force and the Coast Guard so that they could hear Marlowe's description of the sighting.

After approximately five minutes from the time that Marlowe had connected with the marine operator, the boat's power went dead and the connection was cut off. Marlowe did not realize that the power was entirely off at first because the object gave off such a bright light. When he went forward to flip on the auxiliary batteries, he realized that all the power was off. He then ran to the cannery to make another call, noting that the light from the object over his boat which was 200 feet away, was bright enough to illuminate the inside of the building. Finding no radio or other means of calling, Marlowe went back outside and stopped to turn off an auxiliary diesel power generator which was "just barely running". As he reached to turn it off, the object over his boat moved away and the diesel engine began to function normally. It finally

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disappeared from sight after 15 minutes of observation by Marlowe and Kern. After it left the batteries of the Teel were still dead but when the power was restored with an auxiliary gasoline engine, everything returned to normal and Marlowe checked the engine over and could find nothing wrong with it.

This sighting is of particular interest because a diesel engine was affected. In the past diesel engines have not been affected by the presence of UFOs".

However, the following comments were published in the next issue of the APRO Bulletin of July-August 1969:-

"NEW INFO ON ALASKAN SIGHTING

On page 6 of the May-June issue, the details of a sighting of a UFO in Alaska and the subsequent interference of a diesel engine were reported. Dr Harder, APRO's Research Director forwarded the following: "I was interested in the item . . . For the explanation is that the engine was connected to a generator, and if the output of the generator was short-circuited, it would be a heavy load to the engine, slowing it down until the voltage plus the shorting resistance was of such magnitude to equal the power output of the engine. If it was "just barely running" as reported, the resistance shorting the output would be very low, and might even be calculated from the speed of the engine . . . The power output from the diesel would be about proportional to its speed. The normal load resistance for the diesel can be calculated from the generator power and voltage, etc, so all is in hand to calculate the shorting resistance."

It is cases such as this, with detailed analysis, which will eventually provide the answers to questions posed by these characteristics of the UFO phenomenon

Experience gained from this first major project has shown the limitations and pitfalls of catalogues whose data is extracted largely from the broad cross-section of UFO literature as opposed to original case histories on file. Essential basic data such as date, time, duration of event, colour of object and so on are, surprisingly enough, often missing. This situation naturally creates problems with any meaningful statistics you propose.

The re-investigation of the Carl Farlow case, with which I began this paper, has shown that even original case histories on file are not always as accurate and fully documented as they should be. In this particular case the questionnaire on file had in fact been filled in by the witness's father who had offered his assistance to complete the two dozen or so forms he had received through the post. There is little evidence that Carl Farlow was ever interviewed personally by a BUFORA investigator. This is such a pity considering the significance of the case when we realise that after the passage of nine years the tangible and measurable evidence has simply disappeared. If a full and competent investigation had been undertaken at the time of the event, there would have been sufficient tangible evidence and measurable effects to have proven the intervention of some hitherto unclassified phenomenon!

As it is we are now concerned with picking up the threads and although much of the valuable evidence is irretrievably lost, there is a chance that before long we will be able to publish a fully documented account of this incredible incident. Apart from the experience gained from the project, the lesson, once more, is quality as opposed to quantity!

"THE ANALYSIS OF UFO PHOTOGRAPHS
AND
FILMS AS EVIDENCE"

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ooooOoooo

Presented By

ROBERT DIGBY

At The Second

NATIONAL RESEARCH AND INVESTIGATIONS CONFERENCE

BIRMINGHAM, ENGLAND

NOVEMBER 1976

Originally Titled

"THEY SHOOT UFO'S DON'T THEY?"

GOOD MORNING LADIES AND GENTLEMEN, MY THANKS TO ROGER STANWAY FOR HIS INTRODUCTION.

MY TALK, IN THE FORM OF A QUESTION IS ENTITLED "THEY SHOOT UFO'S DON'T THEY?" OR PERHAPS WE SHOULD ASK "OR DO THEY?" 'THEY' BEING THE LARGE NUMBER OF PEOPLE WHO CLAIM TO HAVE TAKEN PHOTOGRAPHS OF UFO'S AND SUBMITTED THEM AS SUCH TO VARIOUS PEOPLE, FOR EVALUATION AND COMMENT.

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I represent a group of people who have come together under the BUFORA umbrella, for the purpose of analysing and investigating photographic cases; I hope, as my talk progresses to impart an understanding of the problems involved in this work.

I will begin with the reaction of people to the UFO film and photograph alike. People vary a lot in their individual reaction to, and interpretation of, visual stimuli. Their accounts of what was seen vary if you compare individual and independent observations of the SAME event.

Typical reactions to a UFO film are as follows:

'FANTASTIC!', 'I HAVE NEVER SEEN ANYTHING LIKE IT'
'WHAT IS IT SUPPOSED TO BE?' 'IS IT A UFO?' 'IS IT A FAKE?'
'IS IT GENUINE?' 'WHO TOOK IT?' 'WHERE WAS IT TAKEN?'
'WHAT DO YOU THINK OF IT?'

Always there are plenty of questions, so how does one go about getting some answers? To begin with, I carried out a search amongst the wealth of UFO literature that exists, only to be very disappointed with what I found. Hynek and Vallee have produced reliable works which include many useful suggestions. On the subject of UFO photographs, with the exception of Hynek, the only publication which represented a thorough and scientific approach to UFO's and did not deal in general discussion but specifics, was the University of Colorado's 'SCIENTIFIC STUDY OF UNIDENTIFIED FLYING OBJECTS'.

I am well aware that there is a credibility gap where this book is concerned. However, the approach needed with photographic evidence has been quite clearly outlined. UFO photographic cases can best be selected for study and analysed on the basis of the following criteria:-

FIRST - A SUBJECTIVE EVALUATION

Do various photographic factors such as focus, clarity, sharpness and contrast combine with the testimony to make the case appear credible? Does the case have potential in providing high probability evidence for the reality of an unusual phenomena?

SECOND - RATIONAL EXPLANATIONS

Is any known phenomena rationally acceptable as an explanation of the observation? Phenomena considered must be based on a wide experience with Astronomical, Meteorological, Optical and Photographic effects. Can the report be a case of mistaken interpretation?

THIRD - IS IT A FAKE?

Can the case be accepted as having been made in good faith? Are there any signs of tampering with the negative? Are the negatives or original prints available? Do the negatives represent a continuous sequence? Are focus, sharpness and other characteristics satisfactorily in accord with the alleged sightings? Are light and shadows internally consistent on each photography?

FOURTH - IS THERE CONSISTENCY?

In addition to the internal evidence of the photographs themselves, is the photography consistent with the witness testimony? Is lighting consistent with alleged time and direction of sighting? Are time intervals between photographs consistent with testimony?

FIFTH - CONFIRMATION OF CONSISTENCY

What peculiar characteristics suggest tests? Is the object in front of, or behind, any landscape features? Are contrast and focus consistent with alleged distance? What can be learned from motions and time intervals? Can the flight path be estimated from the sequence of positions and angular sizes?

The Colorado study of UFO photographic evidence failed to disclose conclusive evidence of the existence of 'flying saucers'. Nor did it, of course, establish that such objects do NOT exist.

SO TO SUMMARISE

- (1) A subjective evaluation establishes whether the case has potential
- (2) Rational explanations (if any) are considered
- (3) Was faking possible or convenient?
- (4) Is the testimony consistent with the photographic evidence?
- (5) Do physical and geometric tests confirm this consistency?

Photographic evidence in contrast to verbal testimony, might be considered "hard" data. However, one cannot assume that a photograph of an airborne disc is more credible than a verbal report. Even if it were true that cameras never lie, photographers sometimes do.

Our primary concern is with credibility, especially since our first photographic case of 1976 was highly dubious. Applying the criteria I outlined earlier, there was no justifiable reason for carrying on a detailed investigation on a case of very apparent low priority.

However, of all the cases we have looked at so far, the majority are hoaxes. Some are made in good faith, but are readily explainable, but 10% are first priority and justify exhaustive investigation.

But of these, there are not many cases which rate as high probability evidence for the existence of UFO's. This, after all, is what we are really looking for.

Two very good film cases are the 16 mm ATV film of 1971, and the Peter Day film of 1973, which was taken on 8 mm film. These are both under intensive investigation, and I would refer you elsewhere for full details. Such cases are very rare, however, in the short time since early 1976, when the Photographic Department came into being, we have about twenty assorted photographic cases under investigation. We will make available our findings and will, hopefully, be able to publish full accounts of the best cases.

I have brandished the term UFO, but this, like many other terms, requires definition. We accept the definition outlined by Hynek in his book "The UFO Experience".

A UFO is the reported perception of an object or light, seen in the sky or upon the land, the appearance, trajectory, and general dynamic and luminescent behaviour of which do not suggest a logical, conventional, explanation, and which is not only mystifying to the original percipients, but remains unidentified after close scrutiny of all available evidence by persons who are technically capable of making a common-sense identification, if one is possible.

We also believe the manifestation of UFO's to be the result of physical causes that can be described in terms of natural laws. Therefore, a UFO event is the generation of an unusual image by a physical cause. A UFO sighting is the perception of this image by a witness.

The term UFOLOGIST is used to mean someone who studies Ufology. However, this terminology is not widely recognized and some schools of thought find this term synonymous with idiocy. With the strange goings-on in physics today, a new role has been cast for a 'Phenomenologist' - one who studies phenomena.

Johannes Kepler was a Phenomenologist. Faced with the precise detailed observations of Tycho Brahe which could not be reconciled with contemporary 16th century ideas of planetary motion, Kepler came to the conclusion that the planets must move in elliptical orbits, with the sun at one focus.

This was a phenomenological model, later clarified by Newton with a more comprehensive theoretical model. The moral is, that however strange the terminology, its credibility is decided by its recognition and the image the term creates.

Personally I am of the opinion that the term 'Flying Saucer' is a dirty phrase. It does, in my opinion, strike an unfortunate image. The term UFO was originally used, in a very simple context, by the US Airforce.

Over time we have had to adopt a more complex definition as already outlined. However, even this term becomes unsatisfactory in view of what UNIDENTIFIED means. Identification is the assigning of an event or object to a class. What this class is, is irrelevant. Consistency, or repeatability in UFO events enable the definition of class properties; and identification of an object can take place as a member of a 'class of behaviour'. The cause of UFO events is not of primary importance, we are concerned with the exact nature of the UFO where credibility of a UFO event and photographic evidence is established, such cases can be assigned a probative value.

The central question in the study of UFO photographs is:-

Does the report have any probative value in establishing the existence of UFO's?

Probative means to afford proof. Hynek is of the opinion that when a photographic case meets all the relevant criteria, all one can positively say that while the probability that the photograph is genuine, is very high, certainty cannot be established.

However, if 25 such cases for example, can each be accorded a very high probability, the compound probability that photographic proof of UFO's exists would be all but undistinguishable from certainty. This is a very good idea which can also be extended to the best documented cases where photographic evidence is missing. But what of probability?

Probability is the likelihood of something, estimated mathematically. The assessment of the probability rating of a report, is highly subjective. One starts with the assessed credibility of the individuals concerned in the report, and we estimate to what degree, given the circumstances at this particular time, the reporters could have erred.

Factors that must be considered here are:-

- (a) Internal consistency of the given report
- (b) Consistency among several reports of the same incident
- (c) The manner in which the report was made
- (d) The conviction transmitted by the reporter to the investigator
and finally, as Hynek puts it,
- (e) That subtle judgement of "How it all hangs together"

A meaningful probability rating would require the judgement of more than one person.

Hynek states that he has found it relatively easy to assign a number to a case for degree of strangeness (values 1-10).

However, it is much more difficult to assign a probability rating. A case with a high 'SP' rating ought to be an outright challenge to science.

In our present stages of photographic work, we have not attempted any evaluations of this type. At present, our role is to obtain the clearest photographic data we can, from the evidence presented to us. In doing this, the real nature of what has been photographed often becomes readily apparent.

A residue exists, in the order of 10% which satisfies our criteria for unknown. Categorising among our un-known is a dangerous occupation though.

I have already stated Dissatisfaction with the label UFO, which supposedly identifies an object as what we are looking for. However, there is clearly a further division, since in some instances we are being asked to believe in the existence, of photographic evidence, of extra-terrestrial spacecraft.

One stone that mustn't be left unturned is that of fabricated photographs or hoaxes.

For years the 'Print Media' and UFO organisations have published numerous photographs stating or implying that these pictures represent genuine unidentified flying objects. And so this situation has, not surprisingly, continued, since there is no authority on such matters whose conclusions are universally recognized.

One could ignore photographs whose authenticity is doubted, or alternatively, draw clear distinctions between reliable and unreliable evidence. Fraudulent photographs infect the genuine ones with suspicion and are a hindrance. However, an alleged photographer of the Loch Ness monster had his pictures prominently featured in the British press and despite refusing the release of the original negatives for serious study by photographic experts, and the fact that there are inconsistencies, in the account of their taking, the pictures continue to be used. The same person once commented that the use of the pictures by the media all over the world would fetch something like £200 000 over the first six months. After that there would be lectures and personal appearances.

So one can see that there are great incentives for obtaining what the public wants.

Amongst a lot of people, especially school-boys, it has become a hobby in its own right to fake flying saucer photographs.

One of the best known hoaxes by a school boy, in this country, was the Alex Birch case. In 1962 when Alex was a 14 year old school boy, he produced a photograph of a group of five saucer-

like objects and he appeared on TV and made radio broadcasts and was even interviewed at the Air Ministry, on each occasion backing up his claim. He appeared at Bufora's inaugural meeting at Kensington to explain the circumstances of his sighting.

My opinion is that this whole event need never have snowballed the way it did in the first place. The methods of photographic analysis available in 1962 could not have been applied. Who were the experts who thought the photograph genuine? And why wasn't the case looked into more thoroughly? Above all, ladies and gentlemen, I feel that this sort of incident does untold damage to the genuine enquirers. It was a matter of coincidence that Alex's photograph came along in time to give the public what they were looking for.

Surely, it is our job to see that this type of incident is not repeated. I feel that if our present procedures were to be followed, then there is very small likelihood of such a repetition. However, we must be on our guard.

I feel that there are other subject parallels which can give valuable lessons.

The tracking down of the so-called Loch Ness monster has been fraught with pitfalls. The concept of a 'monster' lending the whole thing an air of mythology. However, in the Autumn of 1975, a set of colour slides were developed, that were taken in June by an American scientific team. These pictures allegedly show the body of an animal, with a long out-stretched neck, another, the head in profile with open mouth showing teeth and protrusions from the head. Another picture showed the underbelly, apparently complete with parasites. The pictures were all taken underwater and lack sufficient clarity for positive classification.

However, the final verdict on them was left to experts from the Smithsonian Institute and British Museum. Following their findings, a press conference was supposed to be arranged.

Even with these findings, it is only when enough distinguished zoologists get together and agree on the fact that an unusual animal or animals exist in the loch, that the forces of doubt can be brushed aside.

Unfortunately, the photographs obtained by Dr Bob Rines' team have achieved the opposite of what was hoped. A major row broke out between the scientists, when experts from the Natural History Museum in London issued the statement that none of the photographs were sufficiently informative to establish the existence of a large living animal in the loch.

However, the subject has entered the arena of serious scientific debate and one thing all those concerned do agree on, is that there is a strong case for doing more work and trying to obtain better evidence or proof.

Unfortunately, the study of UFO's has not yet entered the same arena of debate with sufficient force of argument. However, we must be prepared for this, with the material to back up the arguments, when the right time arrives.

It is on that note, of being prepared, that I now wish to turn attention to some of the guns in the armoury.

Our work, in the main, so far has been on a variety of existing cases. However, we have been looking at ways of generating new data in photo cases and the use of diffraction gratings is one possibility. In Astronomy, one finds much written data on the visual observation of meteors for example, but little on the photography and spectography of these objects. BUFORA'S Project Photon is concerned with the detection of UFO spectra using this technique. A suitable grating, perhaps transparent plastic, has a large number of grooves engraved on it. These grooves scatter light so as to give two spectra - one each side of the light source. Each spectrum shows the component colours making up the light.

The spectrum enables one to find out the composition and temperature of a light source. If the source is a hot gas it will radiate only a few colours specific to the gas, eg Mercury gas emits only at specific points in the orange, green, blue and violet. If the source is a hot solid, the colours are emitted but some will be more prominent than others. The colour of the brightest part is related to the solid's temperature:

RED	=	below 700 deg K
ORANGE	=	700-1,700 deg K
YELLOW	=	1,700-10,000 deg K
GREEN	=	above 10,000 deg K

If an unidentified light has the same temperature as the Sun (which is 5,600 deg K) or a car headlight (1,700 deg K) or has the same composition as normal street lights (Mercury-sodium or Neon) it is unlikely to be an extra-terrestrial space-ship. One draw-back is film sensitivity and one would need to refer to a chromaticity diagram to see the limited colours which can actually be reproduced by dyes or pigments in colour photography. Yellows are easily produced but there tends to be a lack of rich-greens, blue-greens and violet. Incidentally, modern lenses are capable of resolving more lines per mm than the film emulsion will allow, even fine-grain versions, but new films are on the way and will continue to improve.

In order to photograph a spectra, I use a diffraction grating mounted on a 35 mm slide. I merely hold this in front of the lens of my SLR camera by wedging it in a rubber lens hood. I hope, in the not too distant future, we will be able to organise a supply of suitable gratings which investigators and skywatchers can keep by their cameras. However, our researches are not yet complete.

Other camera techniques used in Astronomy, which could help us, are the all-sky camera perhaps used with the rotary shutter method. The object of the all-sky camera is to photograph a

major part of the sky with the aim of showing the path of an unknown, against fixed points of reference, eg a pole stuck in the ground.

A fast film type is required, commonly Tri-X or HP4 which can be uprated to 650 ASA. Ideal exposure time is about 20 minutes after which star trails begin to merge; also scattered atmospheric light can cause fogging.

For all-sky camera work the camera is laid on its back, either on the ground or preferably on a stand above the ground. The all-sky camera systems may be of three types:

- (1) A collection of cameras fitted with 'normal' lenses arranged in a circle
- (2) A lens attachment fitted to a 50 or 35 mm lens on a 35 mm camera, to give a wide-angle view, or
- (3) A special wide-angle lens (or wide angle camera). For lenses this would include anything less than about 21 mm on 35 mm cameras. A 21 mm lens gives a field view of about 90 deg.

Whichever system is used there are problems which fall into three main areas:-

- FIRST Pictures will sometimes be taken in pitch darkness or maybe bright sunlight
- SECOND The 'object' may be stationary or it may move rapidly
- THIRD The 'object' may be large but distant, or small but close

These factors affect choice of film, lens and shutter speed. Some of the problems of UFO photography are similar to those of meteor photography and therefore similar techniques may be used.

For general photography, lenses faster than f2.8 are recommended such as the 7" and 12" focal length Kodak Aero-Ektar lenses at f2.5, used in conjunction with a very fast panchromatic film.

Reciprocity failure is another problem when making long exposures of faint objects such as comets or nebulae, but for meteor work it suppresses the build-up of sky fog without ruining the momentary exposure presented by a meteor.

Briefly, the law of reciprocity is the concept that changes in the brightness of an image and can be compensated by exposure time, or $EXPOSURE = INTENSITY \times TIME$.

However, where either I or T are very small or very large, this law fails to hold good.

I mentioned rotating shutters and these are easily constructed and can be successfully used to determine the velocity of a meteor. The shutter should rotate at a speed of about 15-20 interruptions per second and should be coupled to a synchronous motor. One design for such a shutter is three triangular apertures cut into a disc. Camera and motorised shutter are positioned so that the rotations of the shutter over the lens will chop a meteor trail into a number of distinct parts and from the speed and dimensions of it, the duration and angular velocity of the meteor can be determined. The shutter also reduces sky fog and effectively allows about twice the open shutter time.

I hope some of these ideas are pointing the way to more scientific skywatching, especially since the data obtained by these methods from a UFO event could be invaluable. Even without a UFO event, the data generated on astronomical events would pave the way for better co-operation with groups like the BAA, whose members look up, not down.

We are working on better means of physical analysis of film, for example, the use of high definition film to enable blow-ups of images from tiny segments of small sized negatives or movie film.

Recent developments - if you will pardon the pun - are the introduction of Ciba-chrome Reversal paper which has light fast azo dyes inherent in the paper which permit good definition and colouring previously not possible.

Video techniques are another possibility. Film can be converted into a video tape image. The information on the video tape can be digitized and hence analyzed by a computer which can carry out picture cell measurements and compare the dots that make up the picture and enable enhancements to be made.

Such techniques are already being carried out in the United States by GROUND SAUCER WATCH in Phoenix, Arizona. Since August 1975, they have actively evaluated hundreds of UFO photographs to determine the exact origin of the image on the film. In each case, computer image enhancement testing was performed on those photographs which passed the preliminary inspection. The total analysis included edge enhancement, colour contouring, digitizing, electronic densitometry and pixel or picture cell measurements for distance factoring.

This processing has enabled a list of photographs to be drawn up which represent strong evidence of an extra-ordinary flying object in each case.

Therefore, we are only around the corner from the suggested figure of 25 high probability cases which Hynes has suggested would give a compound probability all but undistinguishable from certainty of proof.

An area I haven't touched on is the photographing of physical traces and this would certainly be the first job allocated to a team investigating the site of a UFO event, where there was physical evidence left behind. I am pleased to say that the necessary procedures have already been drawn up.

There will be certain cases (classes 1 and 2) where traces will be left. It is vital that immediate action is taken so that the necessary evidence for a proper scientific investigation of the phenomenon may be uncovered.

It would be unreasonable for BUFORA to expect any one person to be able to cope with all the necessary work. In association with members of the scientific community, BUFORA has arranged to establish scientific investigation teams. These are to be ~~at~~ at strategic points throughout the Country. The establishment of these specially trained teams was felt necessary, because:

- (1) Since we do not really understand the nature of the phenomenon, there is a possibility there may be biological, chemical and/or radioactive contamination associated with these sites. We have people trained in handling these agents.
- (2) Specialised site photography is required.
- (3) Site surveys are required:
- (4) On site soil mechanics and geology are required.
- (5) Special techniques requiring use of liquefied gases may be required. (Liquid Nitrogen boils at 196 deg centigrade, and special training is required in its use).

In the event of a trace case occurring, BUFORA'S National Investigations Co-ordinator should be contacted immediately or failing this, any offer of BUFORA.

Details of the case should be given, including date and time of incident, location and duration of the sighting. Give an Ordnance Survey Map reference if possible. Local land-marks will aid the team to find the site.

It might be possible to despatch a team immediately. If possible an eta will be given. You may be asked in some cases to prevent sightseers from damaging the site.

My conclusions to this talk, ladies and gentlemen, are that there is no smoke without fire. We need to establish whose conclusions are recognisable in this field and we need a recognized central body of opinion so that all of us speak the same language.

We need to establish what constitutes proof of the existence, reality and nature of UFO's and perhaps be prepared for the shock if the existence of extra-terrestrial spacecraft should be irrefutable. I think it very likely that a new phenomenon, hitherto unknown, may be discovered that merits a class other than UFO but which has been discovered as a result of our researches.

Quality as well as quantity is needed to produce the best possible evidence, and although I don't feel the time is quite ripe, I feel that it won't be long before the whole concept of UFO's firmly and seriously enters the arena of Scientific Debate.

I gratefully acknowledge the help of Terry Brewis, John Shaw, and Steve Gamble of our Photographic Department.

That only leaves me to thank you very much for listening.

A UNIFIED EXTRA-TERRESTRIAL HYPOTHESIS
IN EXPLANATION OF THE UFO PHENOMENON

BY TIM O'BRIEN

A UNIFIED THEORY OF UFO PHENOMENA

What I have to say about a "Unified Theory of UFO Phenomena" is the result of 12 years study of the Phenomena, and of intensive research over the last seven years into disciplines as apparently widely separated as archaeo-astronomy and psychology; geology and genetics; mythology and mathematics; and languages such as ancient Sumerian Cuneiform and Old Irish Gaelic. I have found all these necessary in tracing a meaning for the extraordinary events which occur from time to time in our skies. In the time, I can only cover principles and conclusions; the scientific discussion which backs them up must be ignored on this occasion. Those who wish to hear the discussion will be welcome at the BUFORA London Meeting on the first Saturday in May when I shall have two hours, or more, to try and deal adequately with the subject.

Probably the most famous of all Sufi "teaching stories" is that of the "Elephant in the Dark": a story of a group of investigators who blundered across a stationary elephant on a pitch-black night, and started to argue about what it was. One with his arms around a leg swore that it was a tree-trunk; another touching its side said that it was a wall; another holding an ear argued that it was a sail for a boat; and one, finding the trunk, declared for a coil of thick rope. Result - Deadlock.

The advantage of unified theory is that it takes all the separate, and seemingly unrelated pieces of evidence and produces a complete picture. Of course, it may be the wrong picture. In the elephant example, it would only need one other to find a tusk and declare it to be a boom leading to the sail, for the body expert to change his mind and say that it was not a wall after all, but a hull, and for the leg-man to change from a tree-trunk to a mast, and the whole group would be absolutely convinced that they had, communally, found a boat. The fact that a boat did not make sense in the middle of the African Savannah would worry them for years.

It does not matter if the unified theory produces a wrong result, for the simple reason that one further piece of evidence, which is incompatible with the whole, will show this up, and will generate

a new theory to take account of the latest development. The danger lies in keeping knowledge in separate pigeon-holes; then, new evidence will simply be placed in a new pigeon-hole, and no progress will have been made, despite new information.

For these reasons, I have been lecturing at EUFORA Meetings for the past four years trying, piece by piece, to draw what evidence we have into a unified whole. And there is no better catalyst for concentrating the mind than having to give a lecture to a group of constructively critical listeners.

Now my Elephant has five parts; or to put it another way, I have been able to examine five separate parts of the Elephant in order to reach a conclusion on the whole animal. These are, returning to the UFO Phenomena:

- (1) The physical impact of the Phenomena; that is the audio-visual evidence combined with that obtained from radar and other electro-magnetic devices.
- (2) The Occupants.
- (3) The Time-Span over which the Phenomena have been recorded.
- (4) The Effects on Mankind which may be attributed to these Phenomena.
- (5) The Purpose behind the Phenomena.

Let's start with the Physical Impact. It is possible to take the commoner, physical manifestations of the UFO Phenomena and to construct from them a scientific model of the UFO itself. But I must stress, immediately, that the construction of such a model does not imply that it is correct in all its features. It is merely the closest approximation to the truth which can be reached, within the limits of human understanding, which most closely fits the observed data. It only stands until new data are obtained which are incompatible with it, and then it requires modification or, perhaps, abandonment.

My model has 9 components:

- (1) It is a solid of spherical, discoid or tapered cylindrical outline with dimensions of the order of tens of metres - rising in exceptional cases to several hundreds of metres. The exceptionally large examples are capable of storing within themselves, and releasing, examples of the smaller kind.
- (2) It has breaks in the solid outline of a circular, or rectangular, pattern through which light is able to radiate. This implies a hollow interior.
- (3) It is mobile within our atmosphere and exhibits relative speeds, and degrees of manoeuvrability, greatly in excess of craft of our own technology.
- (4) Sudden changes of speed, and of direction at very high speeds, combined with the ability to hover for extended periods, indicate that the model is unrestricted by the constraints of terrestrial gravity; it has a gravitational influence of its own, which is capable of neutralising the effects of Earth.
- (5) It is capable of exerting an external field of force capable of interacting with terrestrial equipment.
- (6) Apart from its interior illumination, it exhibits diffuse colouration, varying from natural at rest, through blues when moving slowly, to orange and red during rapid acceleration. There is some evidence, observed by myself, that at constant speeds, after acceleration is completed, the colour reverts to natural - grey or silver.
- (7) It has an unknown, silent propulsive power. Evidence of humming and whistling noises, associated with the model, suggest that these are caused by air disturbances.

- (8) It reacts to human activity; it is conscious of, or sensitive to, humanly activated events on, or above, the Earth. This is particularly clear in the evasive action taken during attempts at interception by terrestrially-based aircraft.
- (9) It is directly, or indirectly, intelligently controlled. It may, of course, be piloted by intelligent beings; it may be robotically controlled; or it may have been programmed to react to given sets of circumstances.

All nine components of the model are subject to reservations and to a range of detail variation. One of these reservations, which some of my colleagues wish to apply, is that the Phenomena may be paranormal, and, therefore, in some way non-physical. With respect, I consider this to be loose thinking. Paranormal, I am perfectly willing to concede, because five of my components are patently paranormal in so far as they are beyond the normal range of human experience and understanding. The solid, physical nature of a large section of the Phenomena is established for me by the many radar contacts that have been made, and by a number of cases of bullets ricocheting from a landed exterior.

However, I do believe that there is evidence for psychically-gifted witnesses having seen an event under circumstances which would imply that others should have seen it too; but where other witnesses have not been found. Such an occurrence may simply imply that a sensitive witness is more observant than others, perhaps ultra-observant; or the occurrence may be displaced in time or space. But this does not imply that the event was non-physical; like a mirage, it has a physical background.

Now, mathematical probability overwhelmingly indicates that the model which I have outlined does not have a terrestrial origin. From my calculations, there is a marginally higher probability for an origin within the Solar System than for an origin in the Galaxy beyond. But this I now consider to be a false conclusion which is modified, in fact overridden, when all parts of the "elephant" are unified.

Time is passing and I should like to give some consideration to the other parts.

B - THE OCCUPANTS

Actually, I am not going to say anything about these for two very good reasons:

- (1) Ted Bloecher has already given us a most excellent outline of what is known, and surmised, about Occupants, and I have nothing to add to that, but
- (2) I have never seen an Occupant, while I have seen my model of a UFO. As a scientist I put great weight on first-hand personal experience; I put less, but still considerable weight on second-hand experience where I have been in contact with those who have had a first-hand, personal experience, But I am very cautious of reaching conclusions on third and fourth-hand experiences. All my knowledge of Occupant cases is fourth hand. This means that I have read what others have collected from investigators who have spoken to those who have had the first-hand experience. This is not good enough. Of course, Ted Bloecher, last night, gave us some excellent third-hand experiences.

C - TIME SPAN OF THE PHENOMENA

If we accept the model as a concrete part of the jig-saw, we find that it, or parts of it, are compatible with a duration of events extending over at least 3,500 years. We find that previously inexplicable events, which would otherwise have to be regarded as myth, have a place in a unified theory. Among individual events are

- (1) the fiery circles which so upset the court of Pharoah Thutmose III that he found it necessary to mobilise the Army; this was in the 16th Century BC
- (2) the experiences of Moses and the Israelites in the Desert wanderings; particularly with the "pillar of cloud by day

and the pillar of fire by night"; and also the extraordinary series of events on the top of Mount Sinai;

- (3) the removal from the Earth of the Prophet Elijah in the Fiery Chariot and Whirlwind
- (4) the experiences of Ezekiel, which have been very creditably analysed by Blumrich
- (5) the meeting of Mohammed with Gabriel at Medina, described in the Koran at which a bright light approached out of the sky, followed after a short interval by the appearance of Gabriel.
- (6) I would even include the Transfiguration and Ascension of Christ

All these, for me, are individual pieces of one section of the overall theory.

C - EFFECTS ON HUMANITY

This part of the theory covers both tangible and intangible aspects, but is so vast in scope that I can do no more than refer to it, here. It is a greater part of a book which my wife and I are researching for at present, and which looks like vying with the Encyclopedia Britannica for length. All I can do is to outline areas of possibility.

There are four periods in our more primitive history when Man appears to have taken a relative sudden jump forward in his development. These were

Ca 40 000 BC - the sudden emergence of Cro-Magnon Man from the ruck of Anthropoids, with his completely upright stance, his modern skull structure and ultra-modern brain size, and his ability to produce animal pictures as a sophisticated art-form. This emergence is seemingly too sudden for an evolutionary process and may, just possibly, have been the result of genetic intervention by extra-terrestrial visitors. One must put it no higher than that.

7TH MILLENIUM BC - the, again, sudden advances of Man, in the Fertile Crescent of the Middle East, from a hunter and gatherer of food, to a settled farmer and stock breeder, producing cross-bred wheats and barleys, and sophisticated legumes, is firmly attributed, in the early Sumerian writings, to teaching by what I consider to be extra-terrestrial visitors. The repetition of these advances in many, wide-spread parts of the world, similarly attributed to "divine" intervention, strengthens this hypothesis.

3RD MILLENIUM BC - the appearance of megalithic monuments with astronomical alignments, and the growth of astronomical and mathematical knowledge, all have the appearances of having been taught. My own work in East Anglia has uncovered designs and surveying techniques, from this period, far in advance of anything which the local cultures could have achieved without assistance.

1ST MILLENIUM BC - the almost simultaneous appearance of great religious and philosophical leaders is remarkable; all contained within a century of the middle of the millenium:

- (a) Isaiah to the Hebrews
- (b) Zoroaster to the Persians
- (c) Buddha to the Indians
- (d) Confucius and others to the Chinese

all teaching the same principles of monotheism, enlightenment, love and brotherly harmony.

Consequently, I see in all this, and in the current events of today, five stages in the Development of Civilised Man, all planned and carried out through extra-terrestrial intervention. These are:

A - GENETIC DEVELOPMENT - genetic encouragement leading to a rapid advance from Anthropoid to the first true Humanoid.

B - PHYSICAL DEVELOPMENT - teaching of husbandry; agriculture, horticulture, domestication of animals, irrigation and implement-making.

C - INTELLECTUAL DEVELOPMENT - teaching of simple astronomical and mathematical principles, and the setting up of Solar and Lunar Calendars.

D - SPIRITUAL DEVELOPMENT - teaching of moral and spiritual values, and the advancement of philosophical precepts in aid of a fuller and more satisfying life.

I am beginning to conclude, I think, that this phase of extra-terrestrial concern with the everyday affairs of Mankind came to an end with the Murder of Christ.

The Transfiguration and the meeting with Moses and Elijah on the Mount, may just possibly have been a conference on how to handle the growing opposition from Jewish spiritual leaders. The Ascension has all the hallmarks of an extra-terrestrial evacuation.

However, one further attempt was made to spread the universal truths, and de-brutalise Mankind. Mohammed was inspired to carry Islam through the Middle East and up to the doors of

Europe. The Crusades stopped this influence from spreading further westwards, and left the two major western, spiritual concepts in open confrontation.

E - SOCIAL DEVELOPMENT - a period, or stage, of non-physical contact with emphasis, perhaps, on influencing minds rather than by overt teaching. I realise that in saying this I am on even more doubtful ground than I was in making pre-historic assessments, but, somehow I feel bound to make this point, if only for the sake of completeness.

I believe that the reason for our visitors' switch from overt to covert teaching is because we are now considered untrustworthy and dangerous.

Our visitors keep to their craft (if, indeed, these are not now robot controlled) for the very same reason that people stay in their cars, with windows closed, in wild game parks. We are no longer simple people, happy to revere the celestial visitor - we are arrogant, panicky and trigger-happy. The US Airforce, and possibly other airforces, and isolated incidents in which pistols have been fired against landed craft, have made MAN'S intentions all too clear. We have become MALICIOUS.

TO SUM UP - My Unified Theory covers 6 basic premises:

- (1) The UFO Phenomena can be interpreted as the manifestation of spacecraft of advanced technology.
- (2) This technology is so far in advance of our own that it is considered to be extra-terrestrial.
- (3) The periodical advances of Mankind from Anthropoid to an intellectual and spiritual creature have been initiated during teaching spells by extra-terrestrial visitors working within local communities.

- (4) These overt teaching spells have now ceased, because Man has developed panicky and malicious tendencies which make physical approach to him dangerous.
- (5) Such contact as occurs today is largely, but not necessary totally, accidental. Instead we are being watched, monitored and studied.
- (6) Such monitoring, I believe, is wholly benign, and merely a covert continuation of the philanthropic assistance which Man has been given in the Past.

But please let me have one last word. The strength and credibility of a scientific theory lies in its ability to predict, in two ways:

- (1) to predict the reactions to artificially induced stimuli, and
- (2) to predict the trends which a series of connected events will follow:

For a UFO Theory, the first kind of prediction is almost impossible to observe in that we have no control over the experiment. I might predict, for example, and indeed I do, that if a UFO accelerates very slowly it will exhibit green and yellow colouration phases before reaching orange and red, but I cannot stimulate the UFO to undertake the experiment for me.

The second type of prediction, about trends, if applied to UFO Intentions, would be defeated by the Time Scale. An enlightened observer of the Anannage's efforts to teach the pre-Sumerian peasant how to cross-breed wheats to obtain wheat suitable for making bread, might have predicted that the next stage would be to teach the more advanced members of the community how to lay out Sunrise Azimuths to assist in making an agricultural calendar - but he would have had to wait 4000 years to say "I told you so".

Any prediction that we might make today concerning the future intentions of our visitors might well have to wait millenia before being seen to be right or wrong - except for one important factor: the exponential increase in the growth of our knowledge. It was said in the 1960s that 90% of our scientific knowledge, then, had been acquired in the previous decade. The curve of accumulating knowledge is still climbing very steeply, but our curve of responsibility is in no way keeping pace. If we were to continue to accumulate knowledge in a climate of diminishing social responsibility, we should, inevitably destroy ourselves.

But my Unified Theory of extra-terrestrial assistance in the development of Mankind leads me to predict that we would not be allowed to destroy ourselves, and that in the event of such becoming an imminent possibility, there would be a dramatic intervention, perhaps of the kind that the Hebrews, in Canaan, became quite accustomed to. However, it is my belief that even this prediction is unlikely to be put to the test, because the curve of declining social responsibility, in my view, has now flattened out and is rising effectively. I do not believe that we shall reach the stage at which intervention is necessary. Instead, we may have a long period of covert guidance until we reach a stage in our development where regular contact will again be possible. At that stage Man should take a very real step forward.

Thank you

AN OBJECTIVE ANALYSIS OF THE UFO PHENOMENON

(A paper for presentation at the BUFORA National Conference,
November 1976)

by

T R DUTTON

SUMMARY

This paper summarises some nine years' independent research investigating the reality of the strangest of reported UFO events.

The work commenced in 1967 with a detailed analysis of objects reported within the UK during a period of intense UFO activity. This first study led to further UK-centred research.

A study of world-wide events was begun during 1973, using data for the period 1885-1954. This work is continuing; however, progress to date is described, and a number of tentative suggestions is put forward to explain the nature of the phenomenon.

A theory of seasonably variable Earth-encounters is expounded, which, with further development, might enable future UFO events to be predicted.

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1. INTRODUCTORY REMARKS

I want to begin by stating that, after a life-time of sky-watching, some 9 years of serious research, and having investigated numerous reports personally, I accept that many, perhaps the majority of so-called UFO's might be capable of being identified, by experienced observers, as man-made or natural objects. However, the work described in this paper has been concerned only with objects having a high 'strangeness' rating, in Dr Hynek's terminology. (Ref 5.1)

The paper deals with two studies, the first being concerned with sightings within the United Kingdom, the second, with global activity.

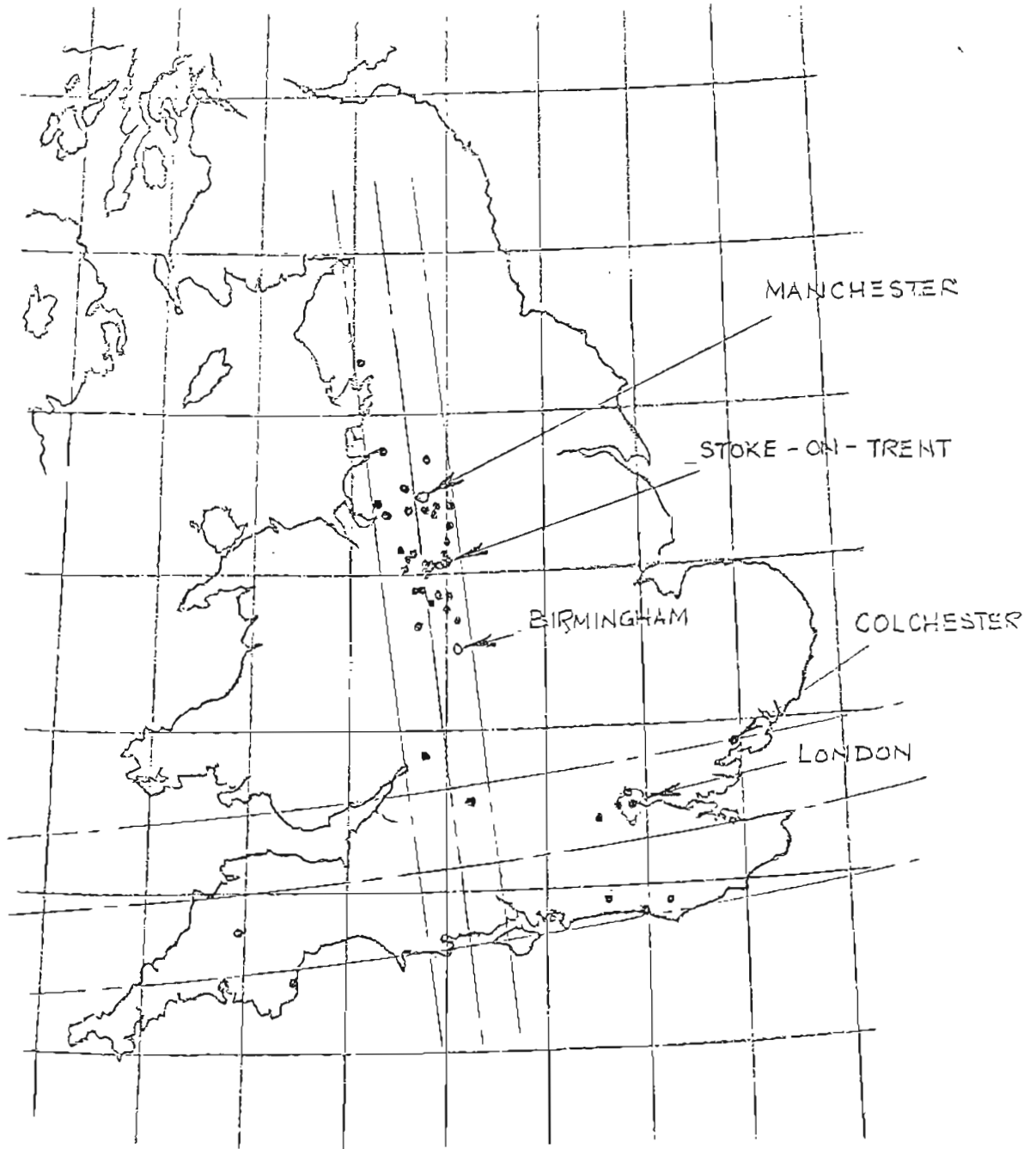
Information for the UK study was obtained largely from Press reports, personal investigations, the files of DIGAP, Manchester, and the Stanway and Pace Report (Ref 5.2).

Data for the period 1885 to 1952 used for the global study were extracted from an unfinished but detailed catalogue of selected reports by Peter Rogerson (Ref 5.3), supplemented by information from the 1972 Catalogue issued by NCCUFOR (Ref 5.4). The Peter Rogerson catalogue is currently being continued in the limited-circulation magazine MUFOB.

The study began in 1967, when it became apparent, from the frequent newspaper reports, that something odd was occurring in British airspace, or perhaps in British minds. Newspaper reports were collected and the contents analysed. The fundamental question to be answered seemed to be

"Is there any coherent evidence to suggest that the Earth is being visited by the products of an alien intelligence?"

It cannot be emphasised too strongly that since the evidence is all circumstantial and the work presented here is unfinished, any conclusions drawn must be regarded as being tentative.



U.K.

SIGNIFICANT SIGHTINGS — 1967

FIG. 1

2. THE UK STUDY

2.1 Analysis of the 1967 Sightings

The first step in the initial study was to mark sighting locations on a map of the UK, the distribution pattern evolving with the passage of time from July to December 1967. Fig 1 shows the result of this exercise.

Towards the end of 1967 it was discerned that a narrow distribution band some 35 miles wide could be drawn North to South which would enclose all known sightings of significance between the Lake District and the South Midlands, and include others in the area beyond, down to the South Coast. It was interesting to note that this band lay roughly Magnetic North/South. By observation, it was further noted that a band of minimum width, covering the scattered sightings in the South of England could be drawn at right angles to the North/South band. This East/West band was some 70 miles wide, twice the width of the N/S band.

These observations were interesting, but could not be considered significant, since a number of questions were posed:-

- (1) Could the sample of data obtained be considered to be representative of the overall pattern for the UK? The absence of reports from East of the Pennines was rather disconcerting in this respect.
- (2) Could the bands be regarded as flight corridors? A survey of the reported flight directions indicated negatively.
- (3) Could the bands be associated with major air routes? A glance at a chart of these suggested otherwise, the Manchester area being the only one likely to be affected in this way.

2.1 Analysis of the 1967 Sightings

- (4) Was there any evidence that people had been influenced by Press stories and had invented the incidents, or misinterpreted natural occurrences? The possibility can never be completely ruled out, due to the suggestibility of the human mind, so, to investigate this aspect, details of the objects described were studied. The results of this study are given below.

2.1.1 Objects Reported

(a) Geometry During 1967 most of the 'high strangeness' events reported involved solid-looking objects of non-aerodynamic appearance. Shapes described were cylinders, spheres, discs surmounted by domes, and a small number of other variations. Consequently, it was concluded that such objects could not be regarded as natural phenomena by any stretch of the imagination, and further could be divided into three classes:-

- (1) Bodies of revolution about a vertical axis, often reported to be rotating about the vertical axis.
- (2) Modified disc shapes having non-circular planforms.
- (3) Bluff cylinders having low length-to-diameter ratios, reported flying with the longitudinal axis horizontal, without the aid of aerodynamic surfaces.

(b) Other Physical Attributes The objects were generally witnessed during the hours of darkness, but, more rarely, were seen in daylight. Daylight sightings reported solid objects sharply outlined against the sky, having a grey or silvery metallic appearance. On one such occasion a small, rotating sphere was seen to display 2 red lights; on another, an oval disc with a transparent dome was said to have carried a white light on the upper surface just aft of the leading-edge, and much incomprehensible detail was described.

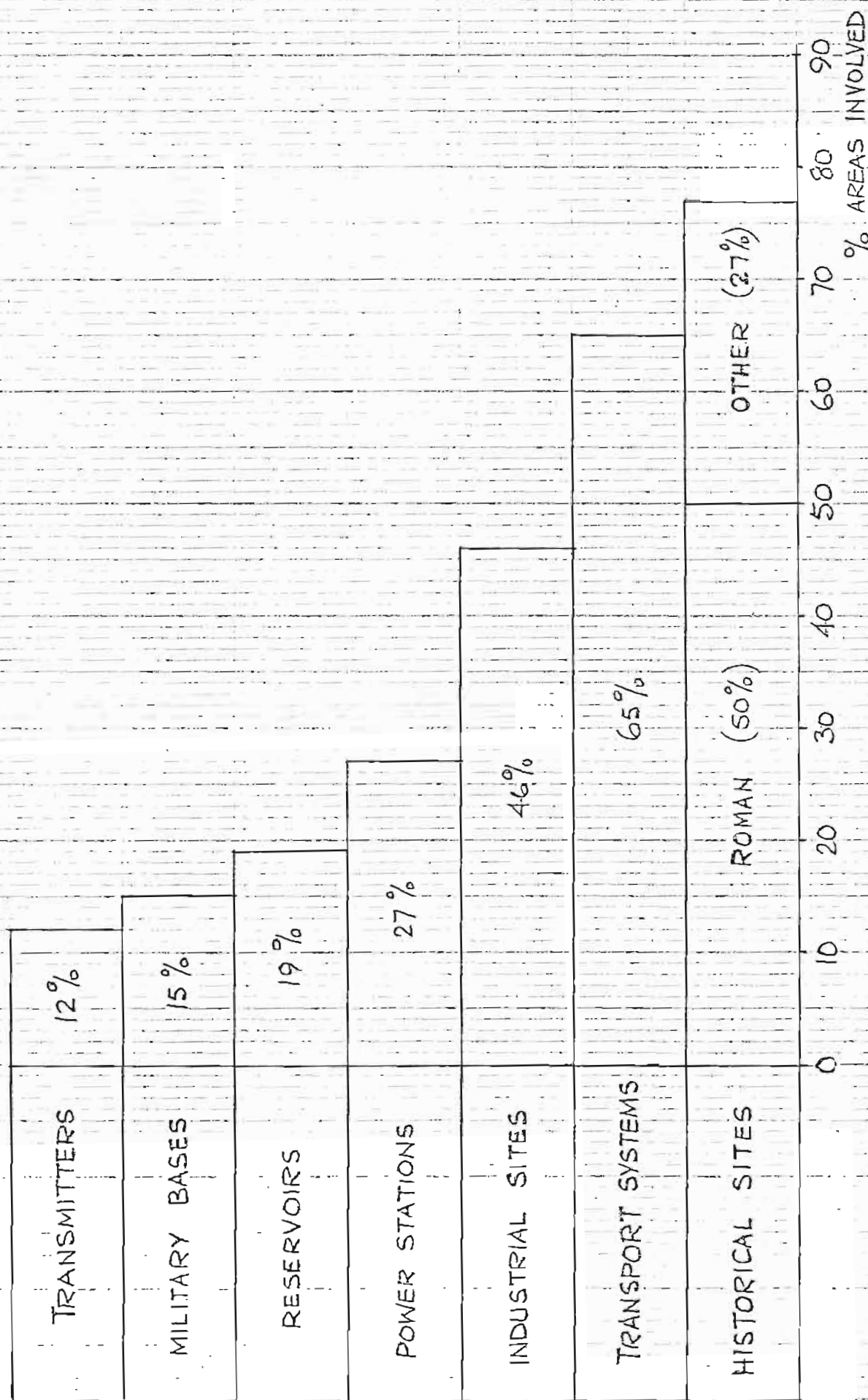
Night-time sightings often involved highly illuminated objects carrying a number of powerful lights, and, in some cases, the entire object was said to be luminous. The overall luminescence sometimes exhibited sudden changes of colour, and further, seemed capable of being switched on and off.

Very few reports involved sound effects, despite the fact that objects seen at close quarters were often said to be large, (estimates of diameters were in the range 30 to 100 feet). However, on a number of occasions involving disc/dome objects, a low hum was reported. Only one object was said to have had luminous jets issuing from it, and on that occasion a high-pitched whine was reported.

Perhaps the most significant sound effect reported was incidentally described in Ref 5.2, associated with a glowing disc/dome object which flew low over house-tops before landing in a nearby field. A sound like a wind was mentioned.

At the time, this seemed to me to be exactly the kind of sound that one might expect to be associated with an extremely energetic, turbulent wake, such as might have been trailing behind the shape described. This idea is given further credibility by letters appearing in recent editions of 'Aerospace', the journal of the Royal Aeronautical Society (Refs 5.5 and 5.6). Two readers have commented on the audibility of the vortices trailing from the wing-tips of large aircraft during landing manoeuvres. The letter in Ref 5.5 describes the sound as "eerie . . . as if the air above my head were rushing down some invisible aerial plug-hole", whilst that in Ref 5.6, referring to recordings and measurements taken in America, notes that the noise level peaked at 30-40 Hz and was characterised by a general 'rushing' sound.

Although the process of energy dissipation in a turbulent wake is somewhat different to that in a tip vortex, for the UFO case in question the energy level could have been of the



LOCATION ANALYSIS — 1967 (U.K.)

FIG. 2

FIG. 2

same order as that in the vortex generated by a C5A freighter aircraft; however one would expect the characteristic frequency of the sound to have been different and perhaps to have been characterised by blustering.

These observations seem to support the view that the object reported in Staffordshire in 1967, which was geometrically similar to others reported during the same period, was indeed solid. I suggest that the witness could not have anticipated an aerodynamic sound effect for which there had been no precedent at that time.

2.1.2 1967 Location Analysis

Having concluded that at least some of the 1967 objects were real in a material sense, my attention turned to close examination of the sighting locations. On the grounds that the objects seemed to originate from the atmosphere, if not from space, and might be monitoring human development, typical signs of Man's presence such as might be easily observed from high altitude were listed as follows:-

- Transmitting stations
- Military bases
- Reservoirs
- Power Stations
- Industrial Complexes
- Transport systems (M-Ways,
Railways, Airports, Canals)
- Historical sites

Sighting areas were then scrutinised for the presence of these. The conclusions were drawn in the form of a bar chart (Fig 2).

The predominance of historical sites was unexpected. Of course, the chart is not statistically sound since the relative abundance of the seven types of location was not determined. Nevertheless, the finding gives some credibility to the idea that UFO activity may have begun in historical times.

← --- ○ OBJECTS SEEN OVER SEA



U.K.

SIGNIFICANT SIGHTINGS — 1971

FIG. 3

(Incidentally, it is relevant to mention that the bisectors of the N/S and E/W distribution bands were observed to intersect in the vicinity of Stonehenge, but this could not be considered to be more than a curious coincidence, since no sighting was recorded from that area, and the bands were drawn somewhat arbitrarily).

2.2 UK Activity During The Period 1968-1973

Time limitations allow only a brief survey of the situation in the UK since 1967.

During 1968 only 4 UK sightings were recorded, and no artificial object was definitely involved. 1969 was also a poor year for sightings, 4 being recorded, but 2 of these involved artificial objects of unknown origin.

Then followed a year of complete inactivity, broken early in 1971 by the appearance of a spectacular fireball, witnessed from the centre of Manchester. This was followed by a green fireball event in February, and then, to my knowledge, nothing of significance occurred until late summer. In the period August to end of November 1971 some 30 strange sightings were recorded. Many involved peculiar lights, but there were 12 artificial objects reported.

The geographical distribution of the 1971 sightings was as shown in Fig 3. Although the pattern resembles that of 1967, the orientation South to North is inclined towards the North West and there appears to be some evidence of a line of activity East to West across Manchester, extending to Anglesey.

During the first three months of 1972 several 'Fireball' events occurred, these being reported in various colours. The late summer again produced a spate of sightings which mainly involved balls of brilliant light behaving as though under control. However, one sighting in August reported a grounded object near Thirsk in Yorkshire. This story was

rivalled for impressiveness by the much publicised Cairo Mill event, near Oldham, Lancashire, in October.

Autumn 1972 was also remarkable for a spate of sighting reports emanating from Salford, which I investigated personally. Almost without exception, these involved strange lights, usually balls of light, which apparently flew in a controlled manner at roof-top level, to the considerable consternation of certain residents of Lower Broughton. The events began in August, and, after a lull throughout September, activity peaked during November. The last sightings occurred on the 13th December.

1973 was a year of strange lights and 'fireball' events. However, there was a spectacular report of a grounded device near Winsford, Cheshire, on 28th January. My records contain some 38 reports for 1973.

Significant UK Activity since 1973 seems to have been minimal, but interesting cases have been reported. Perhaps the most outstanding report has been that involving the rectangular object witnessed at low altitude by a Trinity House employee on the Isle of Wight during January this year. Such reports seem to imply a continuing presence, even in periods of apparent quiescence.

2.3 Evidence For Cyclic Fireball Events

It was noted that, with the exception of 1967, fireball and sometimes other occurrences were reported on and around certain dates in each year. Although sightings were not reported at regular intervals in any one year, by superimposing sightings for several years, a 36/37 day cycle became evident. This cycle divides the year into 10 equal divisions, commencing on or around January 10th. Of course, an astronomer would immediately suspect that some natural mechanism, such as that producing the annual meteor showers, might be responsible, but in fact would find great difficulty in explaining the events in this way. For example, if the cycle exists, only 2 of the 10 dates can be associated with the well-established meteor showers. The suggested occurrence dates are:-

10th January
14th February
22nd March
3rd June
9th July
15th August
21st September
28th October
3rd December

whereas the regular meteor showers occur during the periods:-

3-4th January	Quadrantids
19-22nd April	Lyrids
1-13th May	Aquarids
27th July-17th August	Perseids
15-25th October	Orionide
26th Oct.-16th November	Taurids
15-17th November	Leonids
9-13th December	Geminids

Events on 15th August and 28th October might just be attributable to the Perseids and the Taurids, respectively, but in general, the UFO dates seem to slot neatly between the meteor shower periods.

3. THE GLOBAL STUDY

3.1 The Evidence

The study of world-wide activity began with the first issue of Peter Rogerson's international catalogue in 1973. Details of events were summarised in a list giving the date, time, place, the type of sighting and the latitude/longitude co-ordinates. This last item of information involved much search activity using the most comprehensive atlas available to me. Sometimes the place names could not be located, presumably because the events had occurred in remote areas. Often, the time of the occurrence was not given, and even when time was stated, the standard used (eg GMT, local time) was omitted. If such information had been included in the original reports, doubtless it would have been included in such an otherwise excellent catalogue.

Events during the period 1885 to early 1954 form the basis of my

○ SIGHTING LOCATION

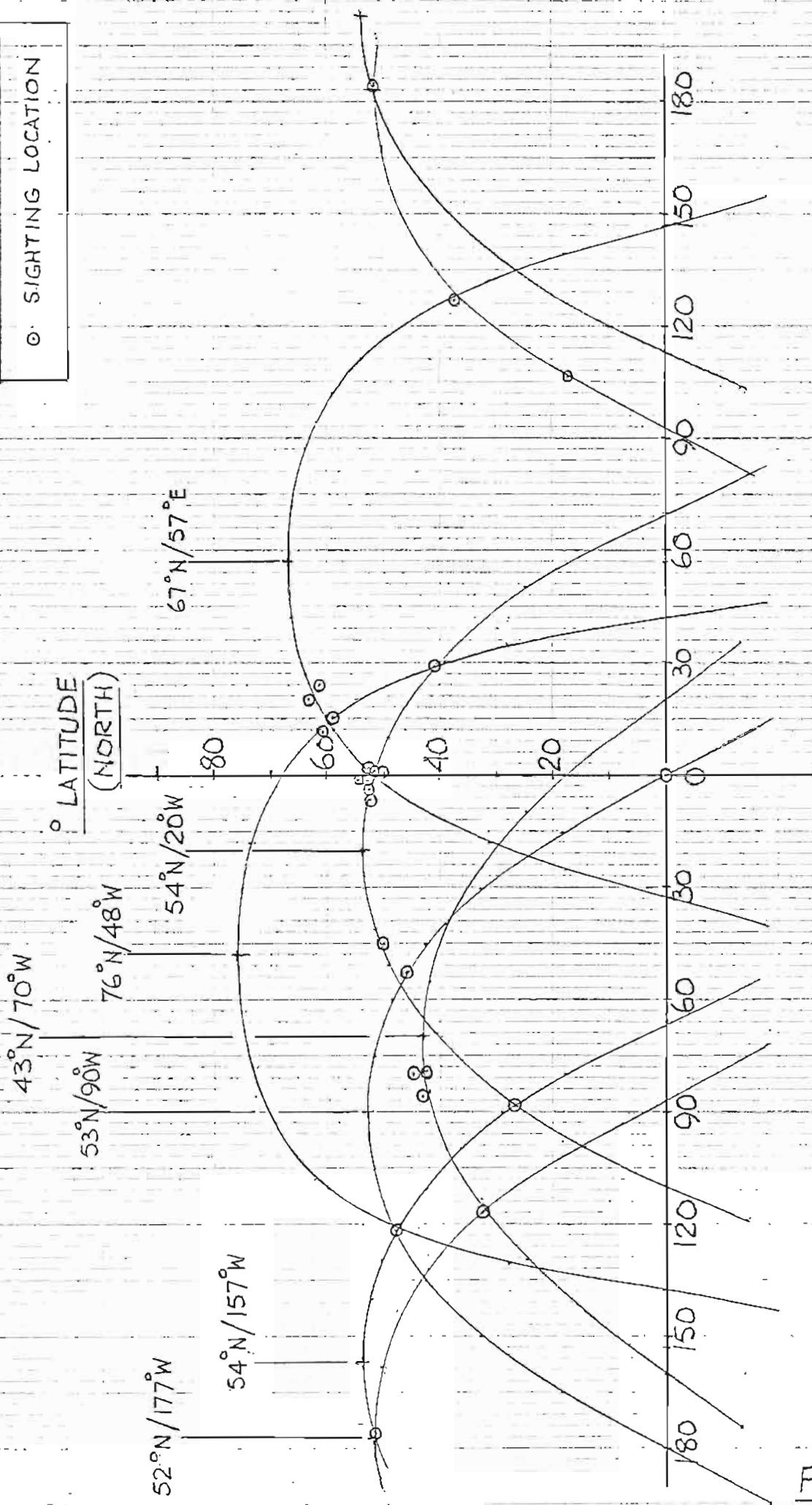


FIG. 4

GREAT CIRCLES — WATER EVENTS (1885 - 1954)

FIG. 4

work on global activity, to date. The exercise began with a straight-forward plotting of the located sightings on a world atlas. This task proved to be fruitless. Sightings were concentrated in the Northern Hemisphere and were in distinct blocks.

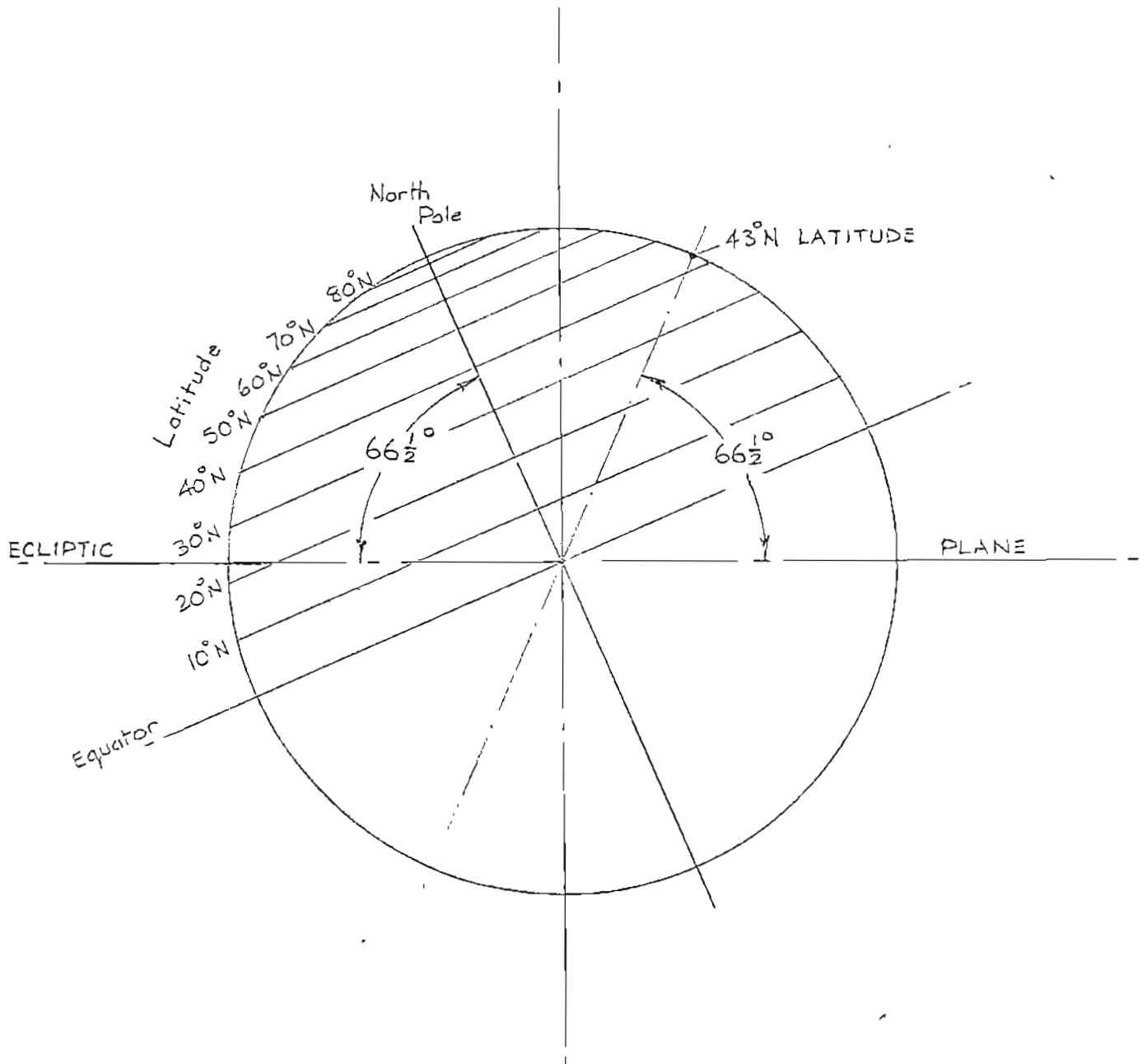
It was next noted that a number of the objects sighted over extensive areas of water had been witnessed not only entering the water, but also exiting from it. Since such behaviour is extremely unnatural, it seemed a logical step to extract water entry and exit events for special treatment. First results were disappointing. Although 23 events could be located they were concentrated in only 12 areas, all in the Northern Hemisphere. Then the idea occurred to me that if these objects had originated from space in a planned way, there might be a series of orbits or Great Circles involved. To investigate this, the area locations were marked clearly on the surface of a small globe atlas, and with a piece of cotton, Great Circles passing through 3 or more well-spaced points were sought.

Seven circles were defined in this way, with maximum latitudes located approximately at the following points, these being confirmed later by a Cartesian presentation as shown by Fig 4.

<u>Max Latitude^o (N)</u>	<u>Longitude^o</u>
43/44	70W
52	177W
53	90W
54	20W
54	157W
67	57E
76	48W

The circles were computed assuming a spherical Earth.

One of the interesting observations made about these circles was that some of the sightings close to 43^o on the 43^oN/70^oW circle had occurred near the Autumnal Equinox at sunset. This became



BASIC GEOMETRY AT AUTUMNAL EQUINOX

VIEW FROM SUN

FIG. 5

of special interest because it was realised that, at the Autumnal Equinox 43°N latitude at sunset reflects the position of the North Pole on the terminator, about an axis drawn at right angles to the Ecliptic, the plane of the Earth's orbit round the Sun. (Fig 5)

Since all the other values of maximum latitude lay between 43° and 90° , the possibility was presented that the other Circles related to specific periods of the year.

An examination of the occurrence dates for the 'water' sightings was inconclusive, since some points were common to more than one circle, and others occurring at different dates, clustered in such a way that it was impossible to determine whether they all belonged on the same circle or not. The exercise was then extended to include all the located and dated sightings between 1885 and 1954. (This excluded those which could not be located or for which no accurate date was given). Again, the outcome was inconclusive. There was little to suggest that the 8 circles defined were preferred distribution lines, or that they occurred at predictable times of the year. With this, the work came to a temporary halt.

Inspiration came several months later, with the realization that the previous work had not necessarily disproved the idea that the Great Circles were seasonably variable. Instead of there being just a limited number of Great Circles with maximum latitudes between 43° and 90° , there might be an infinite number. In other words, each point on the Earth's surface could lie on any Great Circle with maximum latitude greater than, or equal to its own. To prove conclusively the existence of a seasonal variation would require much more observational detail than was available.

3.2 $66\frac{1}{2}^{\circ}$ Theory

There was one other approach possible, viz to construct a model to fit the known situation.

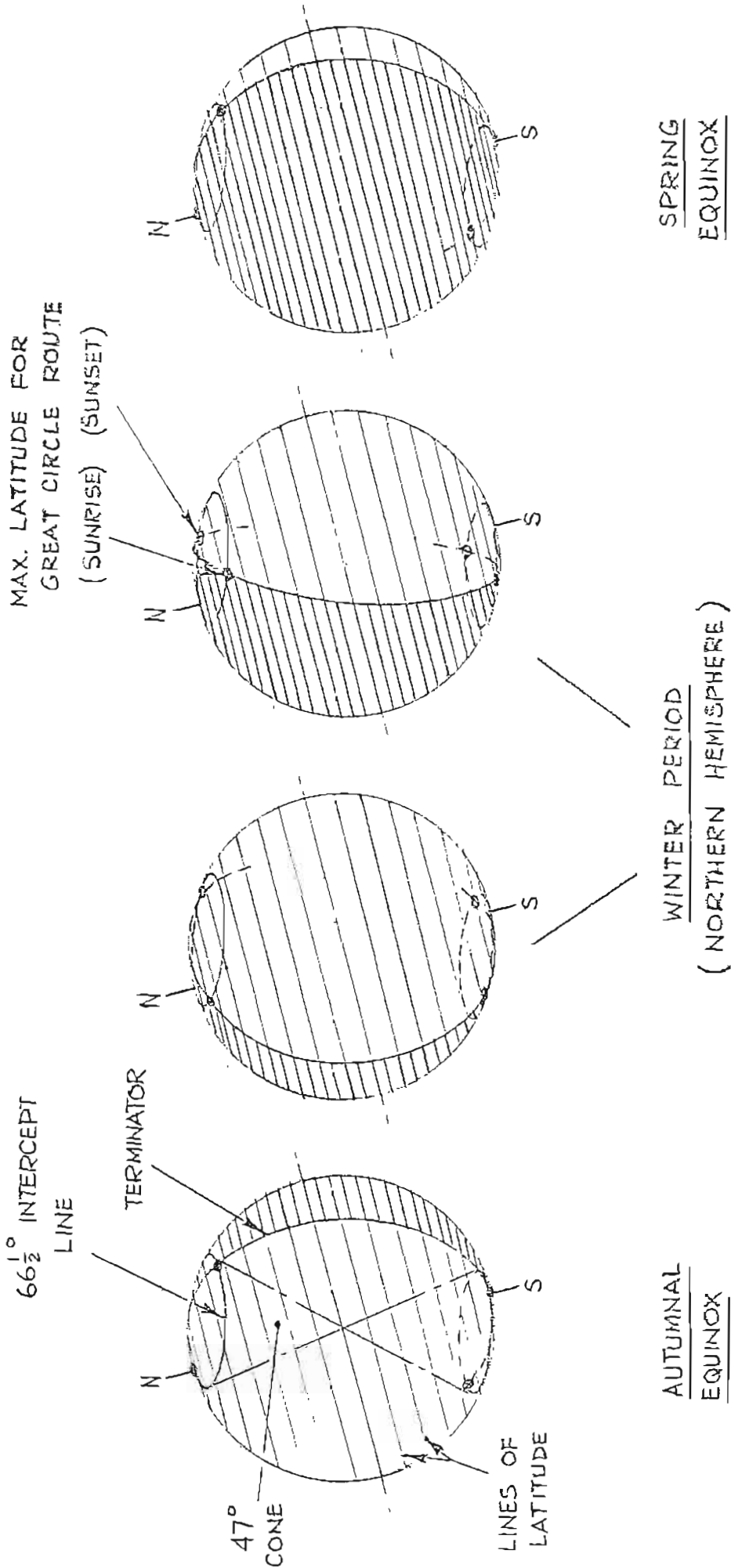


FIG. 6

MODEL FOR 66½° THEORY

FIG. 6

{ SUNSET LATITUDES (NORTH)
 { SUNRISE LATITUDES (SOUTH)

{ SUNRISE LATITUDES (NORTH)
 { SUNSET LATITUDES (SOUTH)

°N & °S
LATITUDE

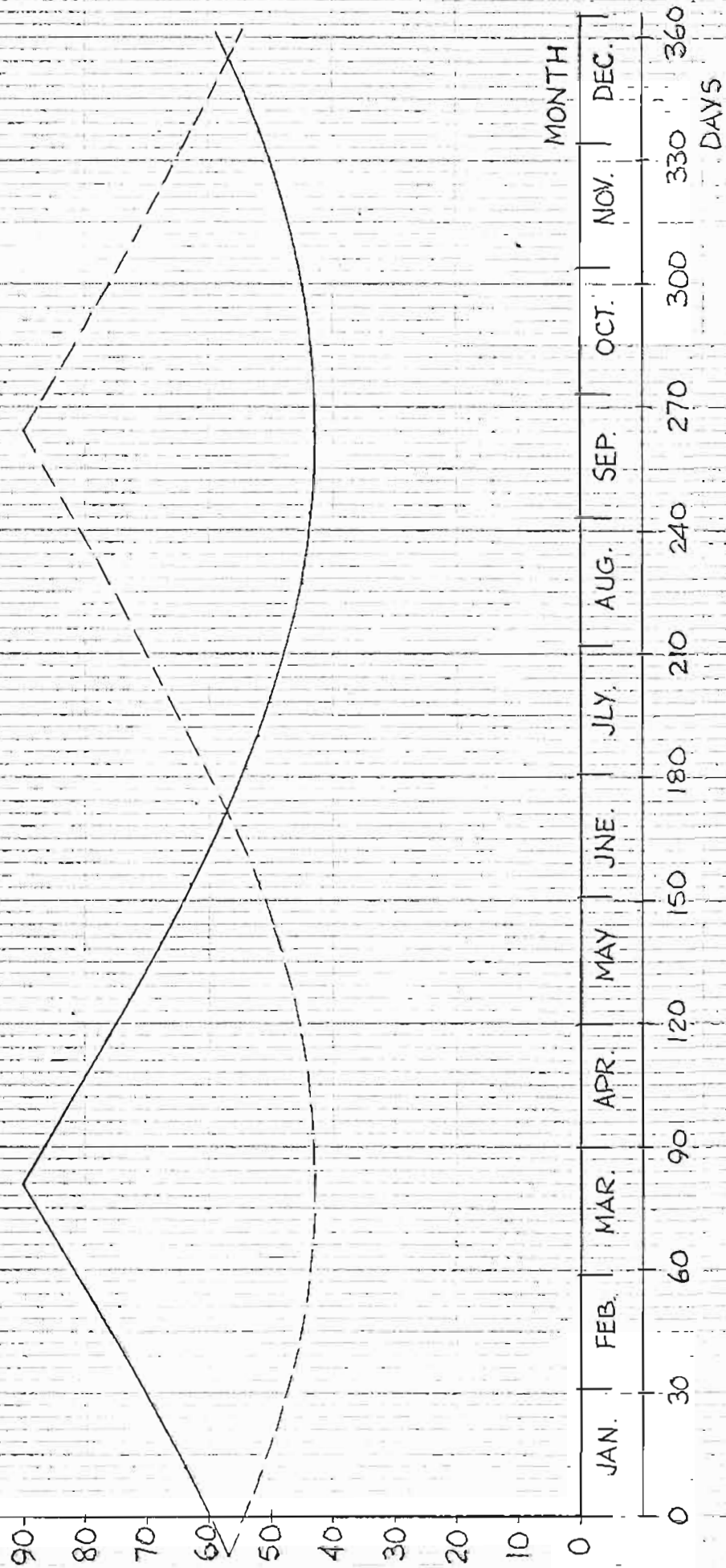


FIG. 7

MAXIMUM LATITUDES — 66¹/₂ THEORY

FIG. 7

All the maximum latitude angles noted had been in excess of 43° . Some observations at approximately 43° N latitude had occurred on the sunset terminator at the Autumnal Equinox. Could the seasonal variation in the location of the terminator, relative to the Earth's spin axis, be the key? Further, perhaps it was significant that both 43° latitude and the Earth's spin axis created angles of $66\frac{1}{2}^{\circ}$ to the ecliptic, in the plane of the terminator. These ideas are illustrated by Fig 6.

The Earth's North Pole is orientated towards a fixed point in space - this is located approximately by the Pole Star, Polaris. As the Earth moves in its orbit round the Sun, its fixed angle of tilt to the ecliptic causes the position of the terminator, relative to the poles, to vary. Therefore, an angle of $66\frac{1}{2}^{\circ}$ to the ecliptic, in the plane of the terminator, intercepts the Earth's surface at points corresponding to angles of latitude between 43° and 90° during the period between the Equinoxes, the actual angle of latitude being determined by the position of the Earth in its orbit.

This was exactly the sort of model being sought. Of course, it was realised that it was just one of many possible models that might explain the situation; nevertheless, the not inconsiderable task was begun of determining the seasonal variation in the latitude co-ordinate on the terminator corresponding to the $66\frac{1}{2}^{\circ}$ intercept with the Earth's surface. The resulting $66\frac{1}{2}^{\circ}$ intercept curves are shown by Fig 7.

At any given time of year in the Northern Hemisphere there were two possible values of intercept latitude, one corresponding to sunset, the other to sunrise. Further, the sunset latitude in the Northern Hemisphere was the same as that at sunrise in the Southern Hemisphere, and vice versa. Using these curves, the significance of the 7 Great Circles was investigated, and the following correlations noted:-

<u>Great Circle Max Latitude</u>	<u>Predicted Occurrence Dates</u>
76°N	14th February * 27th April * 15th August * 29th October *
67°N	22nd January 22nd May 22nd July 22nd November
52-54°N	2-10th* January * 3-10th* June * 1-9th * July * 3-12th December *
44°N	1st March 10th April 1st September 10th October
43°N and 90°N	21st March * 21st September *

The difference between 43° and 44° maximum latitude is obviously critical, but in view of the approximate manner in which the original circles were obtained, it was clearly not possible to differentiate to 1° latitude accuracy.

However, if the dates corresponding to 43° latitude are taken into account, it will be observed that all the fireball dates predicted from the UK study are accounted for and marked* in the above list.

This was totally unexpected and fortuitous, consolidating the results of two largely intuitive, but distinctly separate, exercises.

It is pertinent to note that the key events in the formulation of the $66\frac{1}{2}^{\circ}$ theory involved not fireballs, but artificial devices. Thus another tenuous link was forged between fireball events and objects of artificial appearance.

3.3 Possible Implications of $66\frac{1}{2}^{\circ}$ Theory

It has been suggested, in the previous section, that the intersection of the 47° cone (created by $66\frac{1}{2}^{\circ}$ theory) and the terminator determines the maximum latitude for the Great Circle adopted at any given time of year. Since the ecliptic seems to be the reference plane throughout, it could be guessed that objects approach the Earth in the plane of the ecliptic, and establish sub-orbital entry paths with maximum latitudes close to the terminator. Since most UFO sightings occur during the hours of darkness, it could be further deduced that the objects approach the terminator from the direction of the Sun, and after establishing sub-orbital entry, proceed to a landing area on the dark side of the Earth.

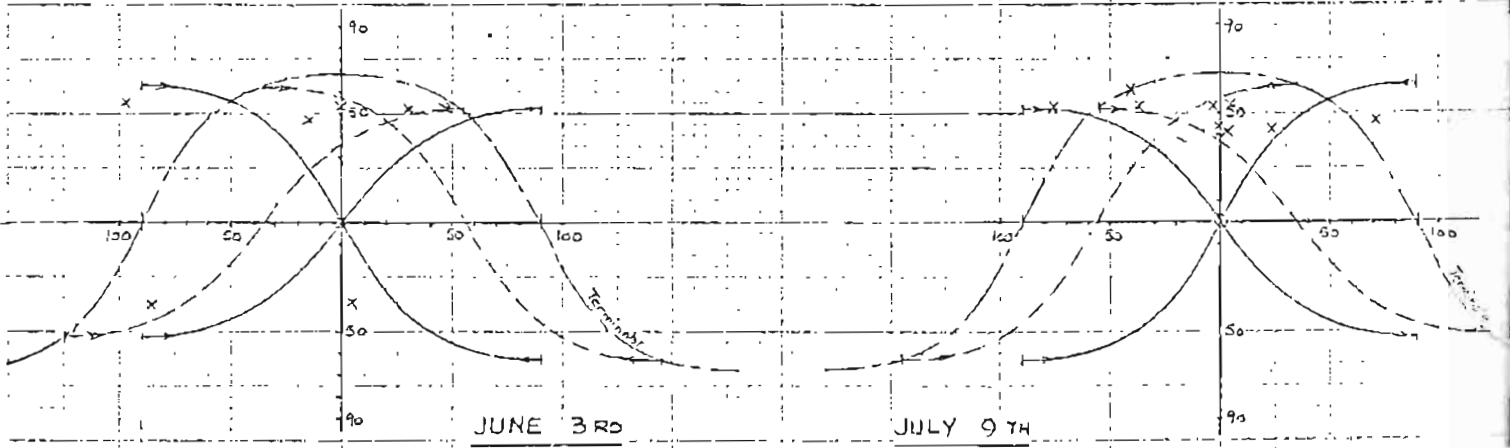
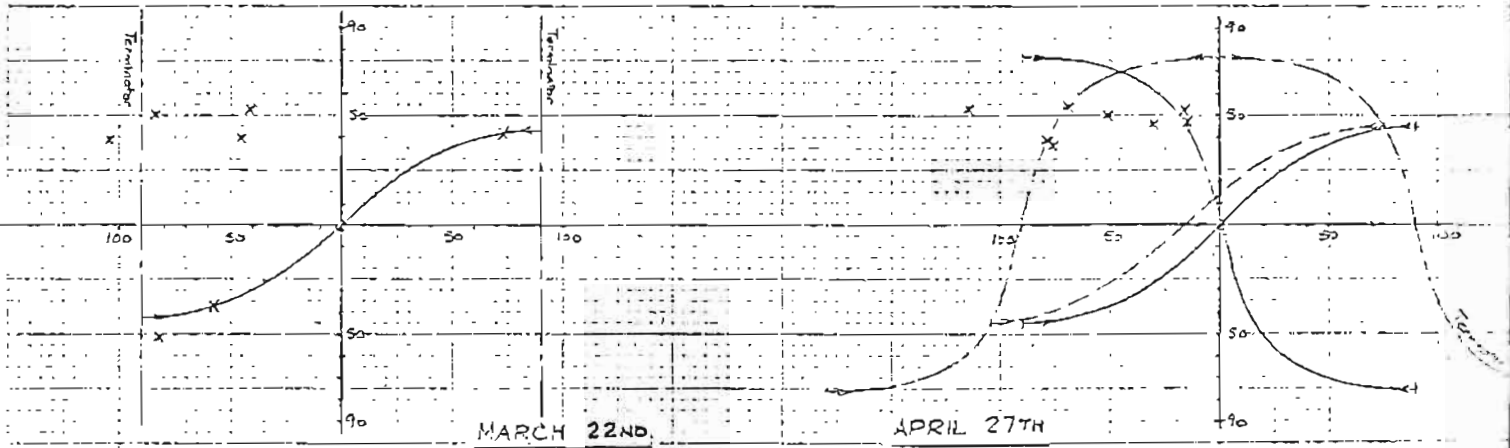
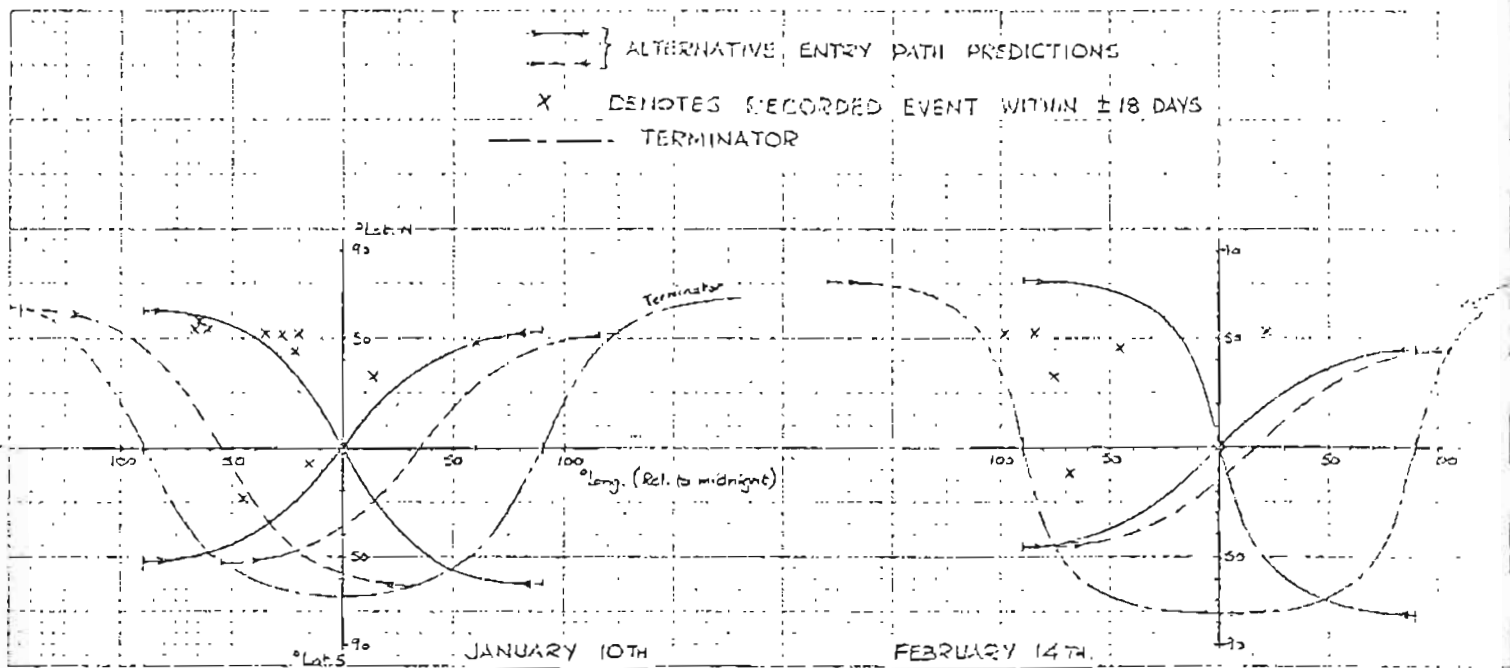
Such an admirably simple tactic would have much to commend it to anyone wishing to conduct regular clandestine excursions to Earth from outer space. An approach from the Sun is in the best fighter-pilot tradition, and the rapid transit at hypersonic speeds to a predetermined landing site would be witnessed only as a transient fireball event.

To investigate this guess another exercise was begun. It was argued that, if sub-orbital entry is always initiated close to the terminator, and a particular Great Circle is followed across the dark face of the Earth, it should be possible to determine the local times of sighting occurrences at all latitudes below the maximum. The shape of the terminator, and the Great Circles corresponding to each of the ten dates previously mentioned were determined and plotted, as in Figs 8a and 8b. Timed sightings within ± 18 days of the dates were superimposed onto these curves, the date scatter band having to be accepted to increase the quantity of data on each chart.

— } ALTERNATIVE ENTRY PATH PREDICTIONS

X DENOTES RECORDED EVENT WITHIN ±18 DAYS

— TERMINATOR



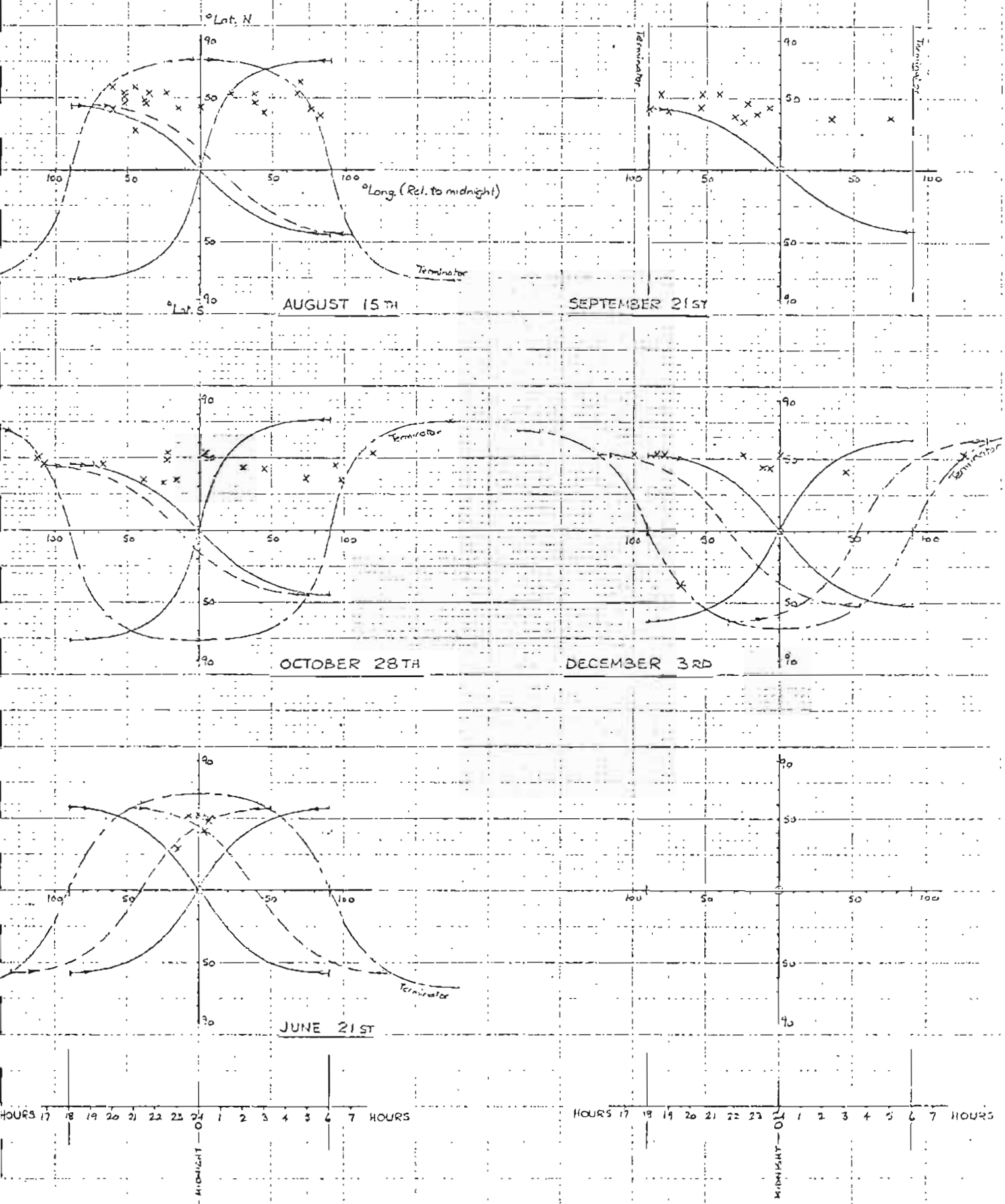
HOURS 17 18 19 20 21 22 23 0 1 2 3 4 5 6 7 HOURS

HOURS 17 18 19 20 21 22 23 0 1 2 3 4 5 6 7 HOURS

SEASONAL PREDICTIONS & RECORDED EVENTS

FIG. 8(a)

} ALTERNATIVE ENTRY PATH PREDICTIONS
 X DENOTES RECORDED EVENT WITHIN ± 18 DAYS
 - - - - - TERMINATOR



SEASONAL PREDICTIONS & RECORDED EVENTS FIG. 8 (b)

At the Equinoxes, one of the options would be a polar route. This means that time prediction could be particularly difficult during these periods. A study of the patterns of actual occurrences suggests that Great Circle routes are being followed, at least at some times of the year, but that they are displaced from those predicted by approximately 1 hour ie 15° longitude.

Displacement of actual circles from those predicted may be due to:-

- (1) Incorrect assumptions on the seasonal variation of maximum latitude.
- (2) Incorrect assumptions on the sub-orbital injection points relative to the terminator.
- (3) Errors in the times plotted. Due to non-statement of the time standard, local time was assumed throughout.
- (4) Objects may not have been witnessed during the arrival or departure sequence.

In the August-October period the random scatter of points across the hours of darkness is indicative of 'wave' activity. Given sub-orbital injection rules similar to those proposed, it is possible that during periods of intense activity, the objects hide in remote places and carry out close reconnaissance missions at all times of the day and night.

There is evidence to support this view. A recent report (Ref 5.7) is of special interest in this respect:-

In thick fog off the West Coast of Ireland, an object was detected on ship's radar, initially, close to the sea and approaching at low speed (6 Knots, estimated). Within 30 seconds the object had apparently accelerated to an estimated 7,000 Knots before radar contact was lost. Other details given were:-

Ship's position	52°30' N 20°W
Date	23rd June, 1975
Time	12.37 (hours?)
Object's track bearing	105° true (constant)

Examination of the appropriate chart (Fig. 8b) indicates that this object was following one of the predicted paths, but at the wrong time of day. However, it should be noted that the object was first detected travelling slowly near the surface of the sea before accelerating away. This suggests an arrival in the sea at some earlier time, perhaps during the night, followed by continuation along the predetermined flight path during daylight.

Given that the objects have this degree of operational flexibility, the task of time prediction becomes well nigh impossible, unless only the times of arrival to, or departure from Earth are considered. For this reason, the exercise illustrated by Figs. 8a and 8b may be meaningful only when sighting data for quiet, non-wave periods are used.

4. CONCLUSION

Even when the inadequacies of the available data are fully recognised, there is much circumstantial evidence, from eyewitnesses' reports gathered throughout the world, to suggest that artificial devices of unknown origin are visiting the Earth on a continuing basis.

This being the case, it must next be concluded that the nature of the objects described is unknown in the terms of present-day science and technology. Any theories propounded to explain the nature, propulsion, purpose and place of origin of these objects must therefore be regarded as being purely speculative. (It is my view that the widespread publication of such theories over the past 30 years has only served to discourage serious scientific research into the phenomena, and therefore, it is not

my wish that the speculative content of this paper should be quoted out of context.) Nevertheless, analysis of the global data has predictable tactic to facilitate visitations to this planet, but due to the apparent variability of this tactic with the time of year, and possibly the use of staging points in remote places and underwater, the accurate prediction of time and place of occurrence is difficult. However, it is suggested that further exhaustive statistical analysis might improve our knowledge of the situation.

There is evidence to link periodic fireball events with other UFO activity, and it has been implied that such events could signal the arrival (or departure) of an alien device.

Finally, scrutiny of sighting locations in the UK during 1967 suggested a link between close-approach UFO activity and the outward signs of human development, an observation supported by the findings of a more recent analysis of sightings in the Manchester area.

Being acutely aware of the incompleteness of the study, and the tentative nature of the conclusions drawn, I have been extremely reluctant to publish this work at its present stage of development. However, recognising the need for a more comprehensive and detailed study, and my own resource limitations, it seemed that a presentation at this Research Conference would not be inappropriate.

5 REFERENCES

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A PROJECTED STUDY OF FLUID VORTEX RINGS
AND PLASMA PHENOMENA AS EXPLANATORY HYPOTHESIS
FOR THE UFO

BY MARK STENHOFF

PLASMA VORTEX RINGS IN THE LOWER ATMOSPHERE

British UFO Research Association Conference

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Introduction

There are three fundamental ways in which reports of unidentified flying objects (UFO) can be interpreted:

- (1) as NATURAL, RECOGNIZED events and known phenomena. This is the interpretation adopted by most scientists.
- (2) as PARANORMAL events representative of more esoteric phenomena, such as extra-terrestrial visitation, 'alternative' and 'parallel' universes, psychic phenomena, time travel, etc. This is the way UFO 'enthusiasts' tend to interpret the data.

The third possible interpretation has been very much neglected, namely the interpretation of UFO phenomena

- (3) as NATURAL physical processes which occur from time to time in our atmosphere and which are so rare that they are as yet unrecognized by science.

This paper examines this third possibility and develops a tentative model to explain some of the sightings.

TABLE 1

COMPARISON OF DESCRIPTIONS OF BALL LIGHTNING AND UFO

	BALL LIGHTNING (Singer)	UFO (Poher)
Shape	Usually spherical, but may be other shapes (e.g., oval, ring-shaped, rod-shaped, irregular, etc.,)	Usually exhibit at least one axis of rotational symmetry. ~ 70% consistent with circular lens shape seen from different angles.
Diameter	Usually ~ 10 to 20 cm. Has been reported up to 260 m.	Usually ~ 1 to 10 m. Can be much larger or smaller.
Trajectories	Very slow to fast. Direct or erratic. Typically ~1 m.s ⁻¹ to 240 m.s ⁻¹ .	Very slow to very fast. Direct or erratic. Can exceed 50 km.s ⁻¹ .
Colours	Wide variation: nearly all colours represented. Red-orange and white most common. Green rarely reported.	Wide variation: nearly all colours represented. Red-orange and white most common. Green rarely reported.
Duration of appearance	Usually 3 to 5 s. Has been reported up to ~ 900s.	Usually 60 to 1200 s.
General appearance	Both groups of phenomena are more often hazy and diaphanous in appearance, but can also be well-defined and solid-looking.	
	Usually luminous, sometimes not.	Sometimes luminous, sometimes not.
Notes	Usually associated with thunderstorms.	
Physical effects:		
Physiological	Witnesses feel 'numbed', paralyzed, burned.	
Odour	Ozone, sulphur, etc.,	
Electro-magnetic	Radio and compass disturbance. Passage along power lines.	
Physical traces	Burn marks; ground marks, furrows, etc.,; damage to electrical equipment.	

Fig 1 Formation of a vortex ring

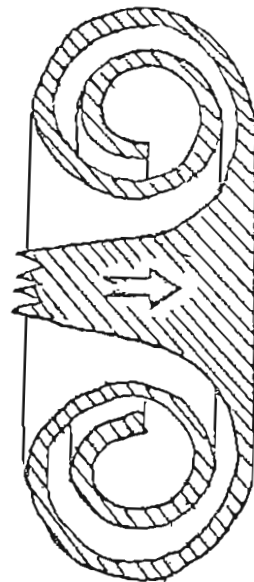
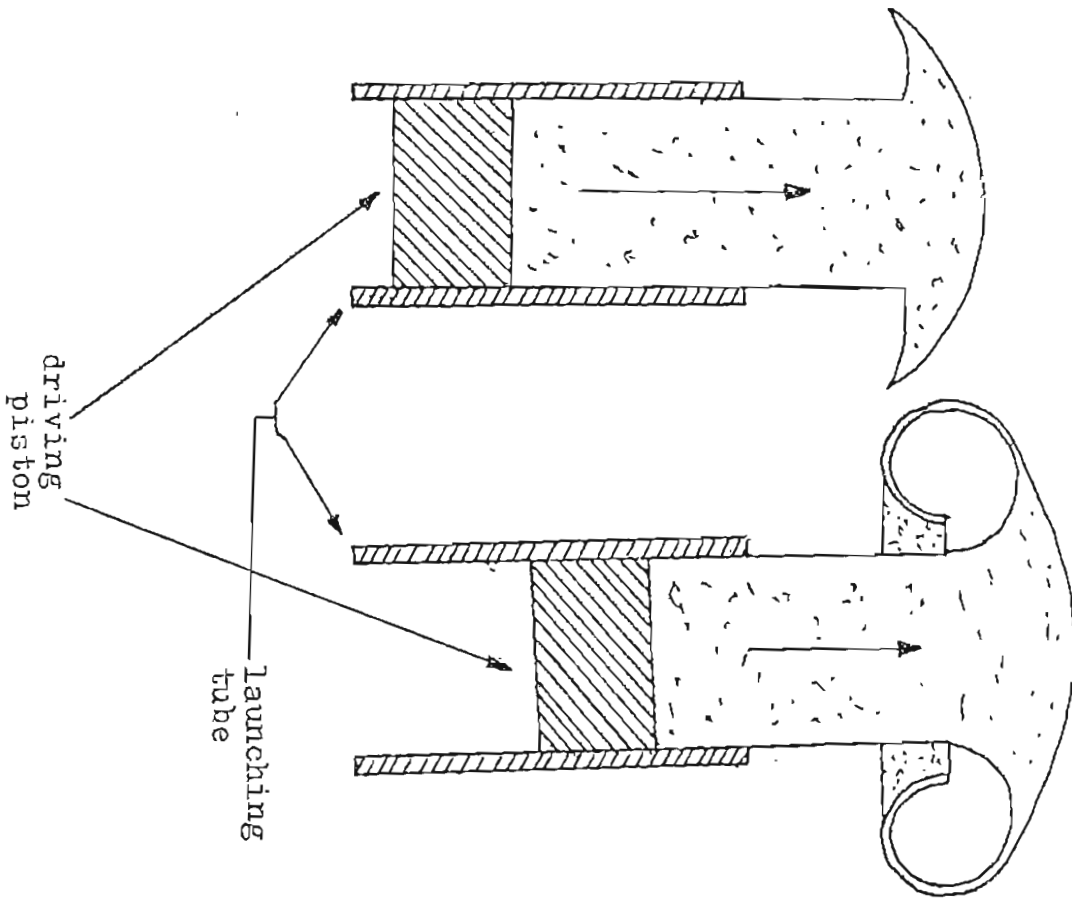
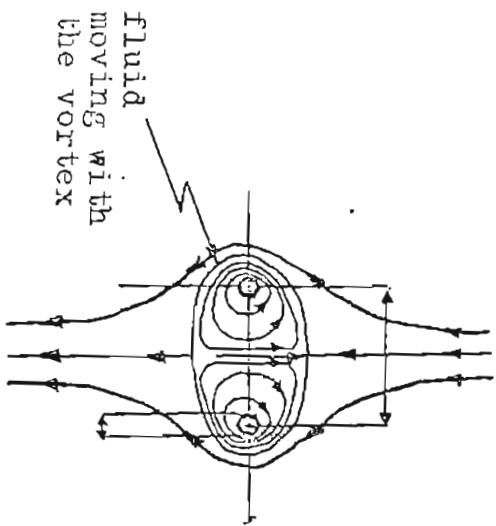


Fig 2 Idealized (Helmholtz) vortex ring (inviscid fluid)



A PHYSICAL MODEL

The physical model suggested in this paper was developed from a comparison of the characteristics reported for UFO and those reported for ball lightning. Ball lightning is a phenomenon on the borderline of scientific acceptance, although it is by no means understood.

TABLE 1 summarizes the comparison. Characteristics are drawn from statistical studies of both phenomena, listed at the end of the paper. (Singer, 1971; Cade and Davis, 1969; Hynek, 1972; Vallee, 1967; Poher).

It can be seen that there are considerable similarities in shape, colours, general appearance, and, above all, physical effects associated with the two phenomena. The suggestion that both phenomena are, in fact, the same is countered by the basic differences in diameter, velocity, lifetime and the fact that ball lightning is usually associated with thunderstorms, whereas UFO usually are not.

In spite of these fundamental differences, the extreme similarities in physical effects suggest that a common physical explanation may be found.

The reported physical effects seem to be consistent with the behaviour of a plasma, or highly ionized gas. However, containment of plasmas under controlled laboratory conditions is difficult enough, and so it is difficult to suggest how a plasma could remain stable in the atmosphere for the periods reported for ball lightning and especially UFO.

One plasma theory for ball lightning was advanced by E R Wooding (See References), who suggested that ball lightning may be a plasma vortex ring produced by a process similar to the ablation of a solid surface by a high power laser pulse. This is not an entirely satisfactory hypothesis

according to others working in the same field, but it may explain some of the ball lightning observations.

Further examination of the fluid vortex ring hypothesis is of interest here because of the bearing it may have on UFO phenomena. FIGURE 1 shows the production of a fluid vortex ring in an inviscid fluid. A variation in the geometry of the vortex ring can result in nearly any of the shapes which have been reported for ball lightning and UFO, with the characteristic axis of rotational symmetry.

In order to hypothesize a plasma vortex ring interpretation of UFO we have to provide a method of formation. We already have an explanation for the generation of ball lightning in thunderstorms, but we have noted the absence of thunderstorm correlation for UFO.

A convenient 'local' source of plasma would seem to be the earth's magnetosphere, and it is worth considering whether or not fluctuations in the positions of magnetospheric boundaries (Bryant and Johnstone) during magnetic substorms could result in the injection of plasma vortex rings into the atmosphere. Recent discussions would seem to indicate that this is extremely unlikely. The extreme energies of particles which managed to penetrate to this depth would produce effects far more dramatic than simple vortex rings, with probable catastrophic consequences. Indeed, it has been suggested that this process could have been responsible for the famous Tunguska event of 1908. The correlation of sunspot activity with magnetospheric behaviour, and the reported correlation also with incidence of UFO reporting (Delair, 1976) do suggest that further consideration of this idea, perhaps in modified form, might be worthwhile.

For an alternative solution, we may consider the fact that lightning strokes do not always occur during thunderstorms (Cade and Davis p13), and isolated lightning discharges from clear skies have been known. Furthermore, reports of ball

lightning which is seen in the absence of thunderstorms seem to suggest a greater energy than that associated with thunderstorm ball lightning. It could therefore be suggested that isolated lightning discharges carry a greater amount of energy than lightning strokes during thunderstorms, and therefore tend to produce larger vortex rings which also have greater velocity and lifetime, and have greater departure from sphericity.

However, this is not an entirely convincing argument and further investigation needs to be undertaken of the various leads suggested in this paper, in particular the close connection between ball lightning and UFO descriptions.

It will very likely be found that whatever theory is finally formulated to satisfactorily account for ball lightning will also provide an explanation for at least the majority of UFO.

Certainly, the glowing, amorphous masses and diaphanous phantasms reported as UFO are far more suggestive of natural events than of spacecraft from an advanced technology.

CONCLUSIONS

A comparison between UFO and ball lightning suggests that the same physical mechanism is responsible for some of the reports.

A possible model in the form of plasma vortex rings is suggested, but the source of these is not satisfactorily explained.

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MARK STENHOFF 1976

THE UFO PROBLEM - SOLVED?

BY IAN GRANT

THE UFO PROBLEM - SOLVED?

To attempt solution of a mystery which has baffled the world's best brains for thirty years may seem presumptuous: but I am putting forward a logical step-by-step approach which is open to verification, and may be modified as necessary in the light of future evidence. This treatment will be set out in greater detail in a book (now in course of preparation): the main difficulty in presenting a brief summary is that some of the conclusions reached by logical analysis are at variance with certain 'scientific' beliefs, which turn out, on careful examination, not to be so scientific after all.

Consider astrology: a struggle between popular credulity and official antipathy has gone on since the days of the Roman Empire. Science has added the invaluable conclusion that it can't be, so it isn't; the facts must not be investigated, because there can be no facts to investigate. This wall of superstition was accidentally breached in 1907 by an astronomer engaged in the seemingly innocuous task of counting sunspots, who made the puzzling discovery that the number of sunspots appearing on the east limb of the sun is consistently greater than the number vanishing on the west limb (947 and 777 respectively, for the years 1889 to 1901).

Since this would seem to indicate that the Earth is somehow suppressing sunspots, it was tactfully ignored by most astronomers, and 65 years went by before Professor K D Wood, of the University of Colorado, published a report showing a close correlation between the mean planetary tide on the sun and the sunspot cycle. Two years later, in 1974, American scientists John Gribben and Stephen Plageman claimed in the book 'The Jupiter Effect' that earthquakes, too, are governed by the positions of the planets. There is a popular belief that when the Moon is in the seventh house, and Jupiter aligned with Mars, something rather spectacular is going to happen - such as the Dawning of the Age of Aquarius. The two American scientists make a different prediction. They say that in 1982, when Jupiter aligns with Mars (and all the other planets - an event which recurs every 179 years), the San Andreas fault will slip, and Los Angeles will be destroyed.

As if this isn't bad enough, French scientist Michel Gauquelin has found a statistical correlation between planetary configurations at the time of birth and subsequent choice of career. A discovery which infuriated scientists and astrologers alike, since the relationships uncovered by M Gauquelin were not those forming the foundations of astrology.

Thus we see that even the silliest superstition may conceal a vestige of truth, while the serious statements of the scientists turn out to be mere pompous platitudes.

Turning to the UFO enigma, let us first consider a few reports which are, I believe, not untypical. We start with an incident on November 4th, 1967, at Fort Itaipu, Brazil. Around 2.00 am two sentries on the ramparts were discussing an unusually bright orange star, when one said "That's no star - it's coming nearer". In seconds a great glowing disc was hovering scarcely 30 metres above them: for perhaps a minute it hung there, then a fierce wave of heat swept over the men, burning them badly as the disc shot skywards. Simultaneously, all the lights in the fort went out, the electric alarm clocks (set for 5 am) started ringing, and though the emergency generators were running, impossibly, no electricity was produced.

For our next report, we move on to September 24th, 1959: Redmond, Oregon. Just before 5.00 am, city police officer Robert Dickerson saw a pink glow in the sky, and a great shining disc plunged out of the clouds, then moved off north-eastwards over the airport. He rushed there, and alerted Flight Specialist Laverne Wertz, who, with other Federal Aviation Authority men, studied the disc through binoculars for several minutes. Then, at 5.10 am, Wertz teletyped the Air Route Traffic Control Center at Seattle; at 5.18 six F-102 jets took off from Portland, Oregon, and minutes later they were approaching Redmond. The disc was still hovering, but as the jets arrived, it rose vertically at incredible speed, almost causing two of the interceptors to crash.

We continue with an encounter on October 12th, 1963, between Monte Maiz and Isla Verde, Argentina. Around 3.30 am in a violent rainstorm, truck driver Eugenio Douglas was stopped by a blinding light ahead. He got out, to find the road blocked by a huge oval metallic object ten metres in height: three manlike creatures, 4 to 5 metres tall emerged, and one fired a burning red light at him. Eugenio fled towards Monte Maiz; reaching the village, he shouted for help at the first house. Meanwhile, the ball of red fire floated on up the village street, turning the street lamps green and violet - while in the house candles and electric lights likewise changed colour.

Finally, on May 31st, 1974, we have an odd tale from Rhodesia, where a young couple were driving overnight from Salisbury to Durban, South Africa. Towards 2.30 am, they saw a light in the sky; the car lights faded, and it became bitterly cold. A 'great light' shone round the car, illuminating an eerie dead-straight road passing through impossible swampy country. They reached the frontier post at Beit Bridge soon after dawn, having covered 288 km on less than 2 litres of petrol. Subsequently, under deep hypnosis, the driver reported "the car was telling me what to do . . . it was direct signals from the spacecraft . . . this simulated screen was put (around the car) . . . we travelled off the top of the road . . . in a dead straight line . . . and then the form which was beamed straight to the back seat . . . it told me . . . if I wanted it to look like a duck, then it looked like a duck; if I wanted it to look like a monster, then it looked like a monster".

Now, what are we to make of these stories? The first two perhaps sound like alien spacecraft, but the others are more like tales of the supernatural. This has led writers such as John Keel to conclude that UFOs are 'paraphysical', or, to quote from a public lecture given by Air Marshal Sir Victor Goddard at Caxton Hall, London on May 3rd, 1969, "creations of an invisible world coincident with the space of our physical Earth planet . . . inhabited by illusion-prone spirits . . . eager to exemplify principalities and powers". Moreover, Jacques Vallee, in 'Passport to Magonia', shows suspicious

similarities between the UFO occupants and the 'little people' of folklore: can it be, he asks, that both are a "functioning lie . . . so well engineered that its image in human consciousness could sink very deep indeed and then be forgotten . . . to control human imagination is to shape mankind's collective destiny".

The trouble with the 'paraphysical' explanation is that it explains nothing, and leaves unsolved that other mystery 'where is everybody?' - why do we seemingly have no visitors from other planets? On the other hand, the reported behaviour of the UFO entities is so consistently ridiculous that it seems absurd to suppose they might be intelligent visitors from advanced civilisations. But then, how would such visitors behave? Not how might they - which only leads to endless speculation - but how must they.

Is it possible to answer such a question? The first thing to realise is that the universe is ten thousand million years old: the chance of a visit from beings less than a million years ahead of us must be remote. To base our predictions of the behaviour of such beings on science-fictional extrapolation of our own technological progress over the last few decades is clearly fatuous. Instead, we must try to uncover the basic principles of evolution. Indeed, we will go back further, and seek to determine the prevalence of Earthlike planets. Because although it has been suggested that life might evolve in other environments - even in outer space - this is mere speculation, and we have to stick to the facts.

How do planets form? When a mass of interstellar gas condenses into a star, the conservation of angular momentum requires that there will be a corresponding increase in any pre-existing rotational motion. Even if the original gas cloud were at rest, spin would be created during the contraction, because the galaxy as a whole is rotating. The new star will only attain stability when the core temperature rises to some 13 million^oC allowing commencement of the hydrogen-helium nuclear fusion reaction, which provides sufficient energy to balance the pull

of gravity. Long before this stage is reached, it can be shown that the equatorial surface of the protostar will have reached orbital velocity, and can thus contract no more; the remainder of the star, however, continues to contract and spin faster. In fact, a number of rings will be formed in succession, and each will be driven outwards from the star.

These rings, originating as they do from the matter of interstellar space, have much the same composition - some 89% hydrogen, and 10% helium. The remaining 1% consists of other elements, derived principally from supernova explosions. As a star 'burns', helium accumulates at the centre and contracts under its own weight. In large stars, the temperature may pass 100 million^oC, allowing 'helium burning' (conversion to carbon, oxygen, and neon); at still higher temperatures, neon is converted to magnesium, and then oxygen to silicon and other elements. Finally, at temperatures over 2000 million^oC, extremely violent reactions lead to the formation of iron, and other metallic elements; at the same time, energy is lost in the form of neutrinos, and the core collapses faster and faster. At about 5000 million^oC, there is a catastrophic change as all the energy supporting the core is used to change everything back into helium; the core collapses almost instantaneously, leaving the outer layers of the star with no visible means of support. These outer layers in turn collapse, leading to sudden heating; the fusion reactions still taking place run out of control, and the whole star blows up with a ferocity that makes the hydrogen bomb look like a very damp squib.

As we might expect from this, the composition of stars is pretty constant, and we can predict what will happen as the rings formed by a condensing protostar are driven outwards and cool. First, crystals of iron will form, together with silica, a proportion of magnesium silicate, and traces of aluminium silicate. As cooling proceeds, increasing amounts of water will be absorbed, to form hydrated silicates. Nitrogen, will be present, mainly as ammonia, while carbon, because of its special properties, will form many compounds - principally methane, but also hydrogen cyanide and carbon-

hydrogen-oxygen compounds such as formaldehyde. In the presence of ultra-violet radiation from the new star, these compounds, together with ammonia, will form a number of organic chemicals, including probably certain oily and tarry materials, which could help to stick together the tiny grains of silicate and iron. Thus solid aggregations begin to form, and are left behind as the remaining material of the rings is driven outwards. With further cooling, first ice crystals form, and then methane and ammonia solidify. It is interesting to note that the planetoids formed in our asteroid belt would consist mainly of methane and ammonia at just below their freezing points; having grown to a certain size, the heat generated in collisions would vaporise the material, preventing formation of a large planet. This might suggest that asteroid belts could be a common phenomenon - an important point, because although our Earth may seem a fairly safe home in the short term, over millions of years, it is being pelted with asteroids like stones from a sling-shot.

We can see from our own solar system that this analysis is broadly correct. Still further out, large methane-ammonia planets formed quickly, sweeping up much of the hydrogen and helium in their paths - the giant planets, Jupiter and Saturn. Smaller particles were driven on by radiation pressure from the new sun, to form the outer planets Uranus and Neptune, while quantities of hydrogen and helium, amounting to some seven times the mass of all the planets, were blown back into interstellar space. We would expect similar processes to occur with all new stars; but, bearing in mind that large stars contract less and burn hotter, we would predict that they would have proportionately smaller planets, and above a certain size, no planets at all.

These predictions are confirmed by measurements of the angular momentum of different stars. As the mass of the star decreases, so does the angular momentum (indicating a loss of gas into space); below about $1\frac{1}{2}$ times the mass of our Sun, the decrease becomes much steeper, showing that an increasing proportion of the original mass has gone into the formation of planets. We

would expect, therefore, that stars larger than the Sun would have smaller planets; as the size of the star decreases, the planets would become larger at first, then level out, before finally becoming smaller. This calculation is confirmed by the planetary system of Barnard's Star, which, although possessing only some 15% of the mass of our Sun, nevertheless has larger planets (1.26 times the mass of Jupiter, at 1.8 astronomical units from the star, 0.63 times at 2.8 A.U., and 0.89 times at 4.5 A.U.). We may reasonably conclude that Barnard's Star also has Earth-type planets; but the ecosphere, or habitable zone, around such a small star is so narrow that chances of life must be small; moreover, the ecosphere is so close to the star that gravitational retardation would lead to slow rotation, one day perhaps lasting many of our months. However, there are some 250,000 million stars in our galaxy alone, and even on a fairly pessimistic calculation we might expect some 10,000 million habitable planets.

What sort of life-forms can we expect on such planets? All life on Earth is derived from 29 basic compounds, notably the 20 amino-acids and the 5 nitrogenous bases of DNA and RNA; these are remarkably simple chemicals, mostly containing no more than 4 or 5 carbon atoms - indeed three of the amino-acids have even less. We may reasonably suppose that the chemical constituents of life on other planets are likely to be similar; at present, however, it seems impossible to be sure they will be identical. This gives rise to the alarming possibility that life on other planets might be based on some different, and perhaps incompatible form of DNA - an idea that seems to have eluded the science-fiction writers, for all their bug-eyed monsters. Could we co-exist with non-DNA life? Would the non-DNA gobble up all Earth life like an unstoppable cancer? Or perhaps do no worse than cause a mild allergic-type reaction? (Like the 'elf-burn' of Icelandic folklore).

Now, each link in the DNA chain has four possible values, so the number of possible variations is immense - with only 175 links, 4^{175} , which is greater than 10^{105} . It has been calculated that the number of atoms in the universe is less than 10^{80} , so it follows that if we made the whole universe into one giant computer, and computed 1,000,000 variations per second on each atom, there would not have been time to compute all the possible values of even such a mini-DNA chain during the entire life of the universe. Since contemporary life-forms on our planet have anything from 10,000 to 1,000,000 links in the DNA-chain, it is clear that the possibility of one particular arrangement arising by chance is inconceivably less than the ratio of the volume of an electron to the volume of the universe. A miracle indeed!

But while the impetus for evolution may derive from random mutation, the process is subject to a very tight control in the form of natural selection. Just how tight, we can see from consideration of the concept of geometrical progression, and to illustrate this I would like to look at something completely different - the population explosion. At present, the Earth's population is doubling every 30 years; that means four times as many people in 60 years, and so on. If we go on doubling every 30 years, we get 8, then 16, 32, 64, 128, 256, 512, and 1024 - more than a thousand times as many people in only 300 years, and a thousand times that (in other words, a million) in 600. At this rate, in a thousand years our population increase can fill 10,000 million planets, which happens to be the same as our estimate of the number of habitable planets in our galaxy. In another thousand years, each one of those planets can populate a galaxy; which just about disposes of the universe. After that, no doubt we would just have to consider some kind of birth control.

What this has to do with evolution? Consider a mutation which gives just one-tenth of one per cent improved chance of survival - something so slight as a millimetre difference in the position:

of the eyes, for instance, giving fractionally better vision of lurking predators. Completely insignificant, one might think, since a population increase of one tenth of one per cent per generation would take 25,000 years to increase from one to two. For 200,000 years the survival of such an attribute would depend almost completely on chance: nevertheless, if such a mutation survives, calculation shows it will become universal well within a million years. Thus we have the concept of biological engineering: each attribute present for a million years or more has been optimised to an accuracy of better than one-tenth of one per cent.

Of course, we understand mechanical engineering much better than the biological variety: even if we imagine cars being assembled at random from random parts, we would scarcely expect a successful model to have five wheels, three headlights at the rear, and a windscreen in the roof. So it is with living organisms; the course of evolution follows sound engineering principles. First the single cell, then the group of cells surrounding a central digestive tube. This tube requires a mouth, and some sort of food-detecting sensor - using touch, sound, or sight, for example. As size increases, we need an improvised mechanism for the distribution of nutriment - a specialised digestive organ, and primitive circulatory system. So we have the first fish. Fins become legs, and the first reptiles emerge from the waters. But the land is an inhospitable environment with extremes of heat and cold; improved systems for temperature regulation, and better insulation, lead to the first furry warm-blooded mammals. At last the circulation is sufficient to support a fair-sized brain, and the stage is set for the appearance of intelligent creatures - Man and Dolphin.

Since our understanding of this process is in its infancy, we can do little to predict the appearance of intelligent creatures on other planets; though we may suspect that some at least might be not unlike ourselves - erect bipeds, with the usual organs in the usual places. Remembering our prediction that many habitable

planets will be larger than our own, we might expect many such creatures to be adapted to a heavier gravity, somewhat shorter and more thickset than ourselves. Such beings are in fact described in folklore as well as UFO reports. Coincidence?

However, it turns out that the most important feature of our analysis is not the physical appearance of extraterrestrials, but their psychology; and here we can predict one important²/₃ difference. In a few years, it will be possible for a perfectly ordinary man to leave a perfectly ordinary car outside Victoria station, and blow up half London. Already in the United States enough plutonium is lost in transit each year to make several dozen atomic bombs. It needs no genius to tell us that as technology advances we will be faced with a stark choice - either we eliminate violence, or violence will eliminate us.

It follows that civilisations millions of years ahead of us will of necessity be non-violent, since otherwise they could not have survived. Now we tend to seek the answer to violence in religion or morality; however, lacking any decisive evidence for the existence of a kind of moral evolution independent of the biological variety, I propose instead a minor correction to the DNA molecule, cutting the excitement and exhilaration out of violence, and enhancing the nausea and shock. Shock is a medical condition, which can kill - rather a disincentive to violence, one might imagine. If this analysis is correct, we would expect advanced beings to be not vaguely 'better' than ourselves, but different in a very predictable way. In their world, the very idea of deliberate violence would be quite incomprehensible, since it would amount to intentional self-injury - a form of madness, except that having eliminated madness as well as violence, this concept too would be beyond their understanding. Presumably they would visualise our deliberate violence as a very odd and destructive form of systems malfunction. Accidental harm, by contrast, they would understand well; but their concern would be less for the victim (who would be quickly patched up in hospital) than for the unfortunate culprit, who would need emergency treatment if he was to survive.

How would a non-violent society behave towards us? The answer must depend largely on the difficulties, or otherwise, of interstellar travel. We must therefore try to assign some sort of numerical values to these - a highly subjective procedure, but luckily it will appear that the exact figures chosen are far from critical.

Some authorities talk glibly of time-dilation and relativistic speeds, conveniently ignoring the incredible energy requirements - even atomic energy can take us to no more than a tiny fraction of the speed of light, for greater velocities we need Total Matter Conversion (the matter-antimatter reactors of the Starship Enterprise). How such a thing might be accomplished we have no idea - just as well perhaps, since the energy required to take us to the nearest star could equally be used to blow a fair-sized hole in the United States. Nevertheless it seems somewhat foolhardy to label interstellar travel 'forever impossible' when NASA is already planning such a trip.

What about 'faster than light' travel? By the theory of relativity, this is impossible; but already scientists such as Burkhard Heim are working on six-dimensional theories which go beyond the four dimensional space-time of relativity. Nevertheless, the idea of rapid or instantaneous transfer seems very far-fetched, so let us consider the implications: if transfer in and out of our four-dimensional space-time is possible, we would expect to find occasional mysterious appearances or disappearance. Such things have in fact been reported since time immemorial, but dismissed as 'obviously ludicrous'. Coincidence? Then there are some recent discoveries in atomic science, including a particle which seems to jump out of space-time.

Should interstellar travel be possible, how can our planet have escaped colonisation? The most plausible disincentive would seem to be the fear of setting a precedent for being colonised oneself - a consideration which applies less if interstellar travel is difficult. As for open contact, consideration of the

resulting 'culture shock' demonstrates that such contact could only be, particularly if interstellar travel is fast and easy, a deliberate act to destroy our civilisation.

Assigning probabilities to all the theoretical alternatives, then, we have:

(1) Interstellar travel impossible:	
Earth contacted by radio	1% x
Not yet contacted	4%
(2) Travel slow and difficult:	
Not yet contacted	5%
Concealed surveillance	5%
Open contact	5% x
Colonisation	30% x
(3) Travel quick and easy:	
Concealed surveillance	25%
Colonisation	25% x

The possibilities marked with an x, amounting to 61% can be eliminated since they clearly have not happened. This leaves 'concealed surveillance' (30%), which might explain UFO phenomena, and 'no contact yet', which does not. Further consideration shows that UFO reports are not consistent with slow and arduous interstellar travel either, so we will now look at the 'fast, easy' alternative, which has been largely ignored hitherto, because it was assumed impossible, and therefore never considered.

On this model, it is clear that the prospect of our discovering the means for fast interstellar transfer must fill accessible communities with considerable alarm. In time, of course, we will eliminate violence, or destroy ourselves. Either way, the problem is solved. But what will they, logically, do in the meantime? The answer would seem to be two-fold; first, they must shorten the danger period by pushing us into the inevitable crisis just as far as they can, and second, in the meantime they must try to delay our discovery of fast interstellar travel as long as possible. It is interesting to note that all matters connected with other dimensions seem to be affected by a deep fear of 'meddling with the unknown'.
Coincidence?

How would our supposed extraterrestrials carry out their objectives? On our planet, the normal method is talk, backed up by war. When violence is excluded, we fall back on 'hidden persuasion', such as 'soft-sell' advertising, and psychological warfare. We may presume that civilisations millions of years ahead of our own would have advanced somewhat in such techniques. Of course, to us the idea of 'warfare' based on dreams and hallucinations seems ludicrous; but consider the simple illusion of receiving a (non-existent) order. With incredible folly, we have placed ourselves in the position where a few key personnel could be deceived into destroying the world. Luckily, it seems the aliens are not taking such measures - yet. Meanwhile they are bombarding us with silly scenarios of ridiculous UFOs, not to speak of elves, goblins, ghosts, and monsters, all of which combine subconsciously to push mankind pell-mell into the crisis of violence, which though inevitable, is none the more pleasant for all that. (And before dismissing these ideas as 'rubbish', remember that we ourselves can produce apparitions, by three-dimensional television, and hallucinations, with drugs such as LSD).

I am aware that these conclusions may seem wild and absurd. I have difficulty in believing them myself. There has been no time to give my logical analysis in adequate detail; I am setting the arguments out in book form, so that those who are interested will have the opportunity of examining them for possible flaws. Because if there are no flaws, the conclusion is inescapable. We are being pushed at great speed towards an inevitable crisis; the pressure is external, but the decision will be ours alone. Time is short; already there are rumours that scientists are on the point of discovering 'instantaneous transfer', and opening the way to the stars. An analysis of UFO events seems to indicate deliberate implanting of fears that in such an eventuality something unfortunate might occur - such as a world-wide failure of electricity. Impossible, of course, but can we really be sure? Perhaps the counter-measures, if they come, may be in other forms; an epidemic of apparitions and poltergeists, perhaps. Who knows?

One thing is certain. If my analysis is correct, humanity is faced with a stark choice, a choice which has faced many species before. In the distant past, when small bands of men faced ferocious wild beasts, violence was essential for survival. But the beasts have gone, and the violence remains. We have changed the environment, and now we must face Nature's law - adapt or perish.

APPENDIX

Tape submitted by Dr. J. Allen Hynek on current UFO research in the U.S.A.

It is indeed a pleasure to greet you on this occasion of your significant BUFORA-sponsored gathering, the second national scientific conference on UFOs. I would have liked to have been able to deliver this in person.

I am happy that Ted Bloecher is with you and among other things he will certainly be able to answer any other questions that you may have on how the Center for UFO Studies and the International UFO Reporter are getting on. As a matter of fact I expect to be in London on December 11th and 12th on my way to Indonesia and perhaps I will be able to meet some of you at that time.

There is no flap going on in this country at this time, although we do have some interesting cases under investigation; one in particular that is being investigated by Richard Sigismund in Boulder, Colorado, may well turn out to be another Betty and Barney Hill case. It involves a time lapse and displacement of the witnesses by some 90 miles without their knowledge and what seemingly is becoming quite a general pattern - an abduction and medical examination and the retrieval of this information only through progressive hypnosis. The same techniques are being used by Mr. Sigismund as were used by Dr. Simon, that is, by not letting the two principal witnesses hear each other's tapes. But Mr. Sigismund tells me that the accounts on both tapes are remarkably similar.

Since my thoughts these days are almost entirely taken up with the Center for UFO Studies and the International UFO Reporter, it is only natural for me to want to speak about these matters to you and indeed it is what I would be talking about were I with you in person. Many of you may not know how the Center for UFO Studies became started and a brief resume might be in order.

As some of you know a number of colleagues of mine and I have been meeting sporadically to discuss the UFO problem, these colleagues including Jacques Valee, Fred Beckmann, Dave Saunders and others, and I think you also know that we had rather jokingly termed ourselves the Invisible College.

Well, in the Fall of 1973 when we had quite a flap here in the United States, and nobody seemed to be doing anything particular about it in any organized way, we felt that the Invisible College ought really to become somewhat more visible and so the Center for UFO Studies, a not-for-profit corporation, was set up and we began without any noticeable funds to try to do something. Funds always enter, of course, and we felt that such funds might be obtained by having popular membership in the Center, but soon abandoned the idea when we realised that there would be no way of keeping the Center from turning into a rather glorified UFO club with a rather wide spectrum of membership, if you see what I mean.

We then decided we might get the necessary funds by simply asking for contributions. Well, this worked reasonably well but certainly not well enough to finance any meaningful research. We finally decided that we would have to lift ourselves up by our own bootstraps, so to speak, and go commercial in a sense. By commercial in this instance I simply mean the publication of the International UFO Reporter, which is to be a type of newsletter, rather short but to the point and furnishing reliable information to schools, libraries and to the general public. But it is to be of such a calibre that no schoolteacher or librarian, for that matter, would be in the least bit ashamed to have this publication open on her desk where, as you know, at least in this country it is so, that one finds on news stands a great deal of trash literature on UFOs which I believe school teachers and librarians would indeed not wish to have open on their desks. It is understood that the revenues accruing from the subscriptions to this publication will be used for research not only for the Center for UFO Studies but for any qualified UFO researcher with a good track record who has a good proposal.

The amount of funds available, of course, will be a direct function of how many subscriptions we get. This is not really meant to be a commercial but rather to tell you how and why the whole thing started. There is a bare possibility that I can get the first copy of the International UFO Reporter, or the I.U.R. for short, to you by air mail before your meetings are over. I wrote an editorial for this first issue which, while it tells you nothing new or at least nothing new to persons who are well acquainted with UFO phenomena, I thought it might be well for the first issue to set down some basics and, if you will indulge me for a moment, I would like to insert this short editorial for the record so to speak, since I am not there to present to each of you an initial copy of the I.U.R. In any event it does express my own feelings about the whole UFO problem.

Whatever one may think about UFOs, whatever one may believe about their physical reality, whatever one may speculate about their origins, one fact has stood out over about a quarter of a century - UFOs continue to be reported by people the world over and in all walks of life.

The contents of these reports continue to intrigue, mystify, entrance and engage our imaginations - even the sceptic can barely fail to sense the dramatic element in a well documented multiple witness report of a UFO close encounter. Almost always each new UFO report bears some relation to previous reports, yet each is a new challenge to the enquiring mind. It is a challenge but it is also a threat to established ways of looking at things to our present concept of reality. Each well-investigated UFO report, which means all reports for which rational explanation has been found have been eliminated, carries us close to the edge of reality. It suggests that the conventional way of looking at things, what we accept as reality may have to be changed, much in the same way that Einstein presented us with a new way of looking at the physical world.

It suggests the need for a shift in outlook and for an allowance for things not yet known. Each age has had its change in scientific outlook in its world of you and the UFO phenomenon may well point the way to the next such change. What that change might be we can only find by diligent research; quick guesses or wishful thinking will not do, only well-supported, well-executed research will eventually yield answers.

It is becoming increasingly clear that the UFO is much more than that which merely fools the eye or deludes the fool - much more - it is entirely new information and only the unprejudiced mind is prepared to take the advantage of and meet this new challenge. Thus endeth the editorial.

Now for a somewhat lighter item. Let me mention by way of passing, the film that is nearing its completion and which will be released in this country at Easter. It is called "Close Encounters of the Third Kind" and I have had the opportunity of being technical adviser on it. It is being directed by Steven Spielberg, the young genius (and I use the term properly) who directed the movie "Jaws".

I agreed to be associated with the picture only if it were to treat the subject respectfully and with sympathy and it does that. "Jaws", as you may know, was a horror picture but "Close Encounters of the Third Kind" is not. It is actually based, in a way, on several actual cases, but it is a fictional treatment of the UFO phenomenon.

I suppose one should not mention this but it has a budget of some twelve million dollars which of course does not guarantee that it will not be a good picture, but I think it is an index of at least the effort that is going into it. I have been on the set and I know it is going to be an extremely spectacular and good

treatment of the UFO subject. I will predict it will have quite an impact on the public here.

Here is another news item rather more directly related to our subject. As all of you know, I am sure, the U.S. Air Force has finally released the "Blue Book" files and I have been asked by a publisher to do a resurvey with appropriate comments on what these files contained, so my assistants and I have gone through all the 94 reels of microfilm and, in a sense, it was "old home week" because it brought back to mind many of my days at Project Blue Book. It was almost a nostalgic feeling to see some of the cases that I had seen back in the fifties, for instance, but reviewing these microfilms it brought home and to the fore very forcibly what a poor project Project Blue Book really was, and how devotion to the policy of "it can't be, therefore it isn't" was upheld.

I have extracted some of the cases which illustrate this particularly well - a case, for instance, in which an object was seen to rise up to meet an oncoming aeroplane, blacked out its lights, swerved, and then went to the west. The Air Force evaluated it as a star. If you should ask, and you might well ask, "Why didn't you do something about that when you were there as astronomical consultant to the Project Blue Book?", the answer is quite clear and simple. I didn't get passed on all the cases by any means and when I did remonstrate with the Blue Book officers, it was generally to no avail. Furthermore, many of the evaluations were re-evaluations. I remember that Sgt. Moody and Lt. Marley years later went back over old evaluations, changing them frequently to suit their fancy at the time. They were not dishonest - that is not the point - they honestly thought they were doing a good job, but they were so imbued with the reigning theorem that "it can't be, therefore it isn't" and the Pentagon policy that UFO reports must be debunked, and that is a natural explanation must be found, since obviously there had to be a natural explanation for everything, and so these good gentlemen proceeded to find a natural explanation for every one.

It always struck me as rather amusing that many of the Air Force evaluations were, for instance, possible balloons, probable aeroplane, possible meteor, but never possible UFO. Obviously there could never be such a thing as a "possible UFO".

When I remonstrated with the Blue Book officers once that it was not good statistics to drop the qualifying words "possible" and "probable" before such evaluations as "possible balloon", I was told that "well, there is no such thing as a possible balloon, it's either a balloon or it isn't, so if there is a possible balloon it had to be a balloon", and that is, of course, the way it went in the records because there was no such physical thing as a possible balloon and one can hardly argue with that. I am sure even as a child I never blew up a possible balloon.

I wish I had a programme of your conference, since I am very curious as to what sort of papers will be presented (please make sure Ted Bloecher brings an extra copy back with him to the States). I believe that Ted Bloecher has brought with him for the BJJFORA library a copy of Dave Webb's 1973 Year of the Humanoids, and a report on the Lumberton case and also the Catalogue of Two Hundred Physical Landing Cases. It is a firm policy of the Center to publish wherever possible fairly lengthy and well considered reports. It is unfortunate that more funds are not available but I do believe that with the coming of the International UFO Reporter, we should be able to publish a great deal more and one of the things that is high on our priority list for publication will be Isabel Davis's and Sud Ledwith's fine treatise on the Kelly-Hopkins Hill case. Also in preparation is a fairly detailed investigation of the Major Coin helicopter case, and actually now available in xerox form only is the UFOCAT Code Book. UFOCAT now has some fifty thousand individual cases entered and we owe quite a debt to our friends

in Great Britain who have allowed their data to be incorporated into UFOCAT. Since this is an informal talk to you in a sense, although I am not officially on the programme and since my mind these days is very much occupied with this Blue Book review I am doing, well it just so happens that this very afternoon I came across a letter from Lt. Col. Hector Quintinella to me, and my answer to him.

This was in later 1968 when my relations with Blue Book were becoming quite strained since it was getting clear that I was not at all pleased with the turn, particularly the more recent turn, that the Blue Book had taken, and the formal letter that I received from Quintinella reads as follows:

- 1) I have just read the Electronic News article of September 30th 1968 with regards to the National Electronics Conference Panel on UFOs. The article states that you and three other gentlemen will appraise the current status of UFOs and review the latest findings including those of the Condon Committee. I wish to inform you that under no circumstances will you review the findings of the Condon Committee as an official Air Force consultant. The review and findings of the Condon Committee will be undertaken by the National Academy of Sciences, therefore the Air Force is not going to involve itself with Dr. Condon's report until the National Academy releases the document to the Secretary of the Air Force and the general public.
- 2) As your project monitor I would appreciate if you would refrain from identifying yourself as an Air Force consultant when participating in pseudo-scientific panels of this type.

My reply was as follows:

- 1) Material contained in the above reference subject was not officially sanctioned by me, in any event since the recent two month extension of the Condon contract, there will be no Condon report to discuss. The matter therefore is academic and be you assured that since I have had no official Air Force connection with the Condon Committee it is preposterous for any one to think that I would essay to comment or criticise or in any other way discuss the Condon report, other than in my capacity as a private citizen of the U.S.A.
- 2) Your reference to the pseudo-scientific panel in my opinion is illogical. A panel could only be called pseudo-scientific if its members were pseudo-scientists.

The locale of the sponsorial organisation has nothing whatsoever to do with whether a panel is pseudo-scientific or not, this clearly depends on the constituency of the panel. In this instance you mention the panel members are all scientists, that is, either Ph.D.s or their experienced equivalent and are associated respectively with the Universities of Chicago, Colorado and North Western. I suggest that you retract your allusion to a pseudo-scientific panel.

Signed J. Allen Hynek.

I thought you might be a little amused at this drop-out, you might say, from the files of Blue Book. Towards the very end of Blue Book, I was hardly speaking to Col. Quintinella by then.

Yes, indeed, the chance to review the entire Blue Book files is really quite an experience for me and it certainly brings back those days from late 1940s to early 1969. Since I am in a reminiscing mood, I wish now I had paid more attention to the actual politics of Blue Book while I was there, but my memory

serves me very well nonetheless and I remember many instances both amusing and sometimes even semi-tragic that occurred during that long period. I still remember quite vividly the day that three men from the Wright Patterson Air Force base came to visit me at the observatory. No, they were not dressed in black! They questioned me about, as they put it, the "flying saucer craze" and finally ended up by asking whether I would care to consult with the Air Force as an astronomer on this whole subject. I thought it would be fun and I certainly entered the whole thing as a complete sceptic. I remember the early days of Project Sign and my tortured efforts to provide a normal, commonsense, rational explanation to each and every one of the reports that was in at that time, and I certainly stretched my imagination to do some of them, but of course I was sure there could not be such things as "flying saucers" and obviously they had to have a natural explanation. Then when Project Sign took over my services were temporarily terminated and it was not until the great flap of 1952 when UFOs appeared over Washington D.C. that I was asked to come back in service, so to speak, although I remained a civilian.

I remember the early days with Captain Ed Ruppelt, who was certainly a very puzzled chap and one who was trying very hard to do a good job and tried to be scientifically honest and yet also tried to please the Pentagon. Since he knew very well which side his bread was buttered on and also knowing how one goes on about getting promotion in the Air Force, he did his very best to play ball and make everything out as a bird, balloon, aircraft, meteor or hoax; next came Capt. Fardern who was a superb master of not rocking the boat and he was followed by Capt. Gregory who was by far the most conscientious and zealous debunker the Blue Book ever had. He was followed by Col. Friend who brought very real balance to Blue Book and did, I believe, the best job of any of them. He was followed by first Major, then later, Col. Quintinella, who recognised that he had a job to do and went ahead and did that job. Well, anyway, the release of the Blue Book files has certainly given me a chance to review those old days, days that certainly changed my life. I often wonder what my life would have been like if those three men had not visited me. I really wonder how I would regard flying saucers and UFOs today as an astronomer.

Would I have got interested anyway or would I, like most of my astronomical colleagues, have considered the subject beneath the dignity of my attention? It is certainly hard to say because as all of you know, one doesn't get to know much about the UFO subject unless one reads a lot and rolls up one's sleeves and actually looks into some cases. But this of course requires that you are first interested in the subject before you go ahead and do the reading, and of course a person really does not become interested in the subject unless he does the reading, so you have a real vicious circle. This is a little bit like a person trying to find his misplaced reading glasses but finding that he needs his glasses in order to find his glasses. There is indeed a moral there somewhere.

In any event I have rambled for too long and if any of you are still reading we once again wish your conference the best of successes and I am most anxious to learn of its results and I do hope that I will at least see some of you in December. Thank you.

