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# UFO PHENOMENA

an international annual review devoted  
to the scientific study of ufo phenomena

editor in chief  
r. farabone



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## EDITORIAL

After many mishaps we have finally succeeded in publishing this first number, thereby starting a discussion that we hope will prove useful and lasting with those people interested in the UFO area.

As we have already mentioned in the Miniature Issue, it is our intention to keep the standards of this journal at a high level, therefore, the items published therein will only appear after checking and approving by competent referees. This does not necessarily mean that the authors wanting to take part have to belong to the academic world.. On the contrary, we will warmly support the collaboration of all those people who seriously wish to deal with this subject, without excluding anybody, regardless of their activity. However, we are not prepared to compromise with the rules followed, or the seriousness of what we will be publishing, and this will be guaranteed by the qualification and capabilities of the Editorial Board. We believe that these comments will satisfy the expectations of those people who devote themselves to UFO research in order to tackle the problem, not for sensationalism, but to investigate the unknown nature as much as possible. We are not, therefore, interested, except from the sociological point of view, in the mysterious nor, consequently, will we cram our pages with miraculous publicity. As you can see from the rest of the volume, we have no advertisement. If at any time this should happen, it will refer exclusively to apparatus and advertisement of a strictly scientific nature or anyway documentation useful to our investigations.

It is obvious that our intention is to achieve a scientific journal from every point of view: it must be evident that ufology is a field of research as much as any other. Moreover it is as closely involved as is biology to physics, engineering to psychology, sociology to philosophy, there is a possibility to offer a valid, notable and significant contribution to the progress of science. Obviously this is not the result of some miracle, but is thanks to the efforts and involvement of those of us who do not wish to give in with a shrug of shoulders, or with a laugh like those people who do not feel that this phenomena is worth more attention.

This is an important point: any journal worth existing needs an active collaboration of people who are interested in the arguments with which it deals. It is also your duty, therefore, to discuss and face problems so that the study of the UFO phenomena can go ahead and that the relative knowledge is always increased. It is with this plea that we close these lines: a channel of communication has been opened (which we want to be serious and correct) between us: let's try to keep it open and lively.

*Roberto Farabone*

## SCOPE AND PURPOSE

This journal publishes *original* papers concerned with the following fields of research:

- 1) PHYSICAL ASPECTS OF UFO PHENOMENA
- 2) GATHERING AND PROCESSING OF DATA CONCERNING UFO PHENOMENA
- 3) THE "CE III" (according to Hynek's terminology) IN THE UFO EXPERIENCE
- 4) PSYCHOLOGICAL AND PERCEPTIVE ASPECTS IN THE UFO EXPERIENCE
- 5) EPISTEMOLOGY OF THE RESEARCH ON UFO PHENOMENA

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## SUBSCRIPTIONS

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Subscriptions should be sent to the publisher EDITECS, PUB. HOUSE. CAS. POST. (P.O. BOX) 190, 40100 BOLOGNA, ITALY.

## INSTRUCTIONS TO AUTHORS

THE VERSION OF THE INSTRUCTIONS TO AUTHORS PRESENTED IN THIS VOLUME SHOWS SLIGHT DIFFERENCES IN COMPARISON WITH THE MINIATURE ISSUE.

FOR THE EVOLUTIONARY NATURE OF UPIAR OTHER CHANGES COULD BE REALIZED IN FUTURE ISSUES.

The following will be taken into consideration for publication:

- 1) Papers stressing experimental results.
- 2) Papers of theoretical content leading to higher level of understanding of the UFO phenomena and stimulating new experimental research.
- 3) Papers of experimental content not directly dealing with UFO phenomena, but having implications in the direction clearly expressed.

Editorial Papers dealing with subjects of general informative interest are published only upon request by the Editorial Board.

Supplements (monographs or congress proceedings) are occasionally published. Announcements of meetings, symposia and workshops in the field will also be considered for publication.

### SUBMISSION OF MANUSCRIPTS

Authors should send one copy of their manuscript, typed and double-spaced on white paper to *one* member of the Editorial Board according to the paper content:

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SECTION "GATHERING DATA"

SECTION "CE III ASPECTS"

SECTION "PSYCHOLOGICAL ASPECTS"

SECTION "EPISTEMOLOGY OF THE RESEARCH"

A second copy should be sent to EDITECS PUB. HOUSE, CAS. POST. (P.O. BOX) 190, 40100 BOLOGNA, ITALY. This copy *must* be very clear since it will be used for the conclusive print.

A third copy should be retained by the authors for their own use. The same procedure should be followed for original illustrations (photographs, diagrams, drawings, etc.) which will also be in triplicate as above.

Only original papers written in English will be considered. As an exception, papers written in French will be also accepted. But, they will have a full English translation of

the title and the abstract.

For the interdisciplinary nature of the journal, which is addressed to the scientific community as a whole, but also to those who are not familiar with the author's discipline, the contributors to "UFO PHENOMENA" are requested not to use technical terms or jargon.

All accepted manuscripts will be published by a *direct photographic reproduction process*, excluding every possibility of subsequent alterations.

Therefore either the form or the content of the paper should have been carefully checked to exclude the need for corrections in proof.

Thus it is fundamental to follow the above and following instructions so that unpleasant misunderstandings may be avoided.

The Publisher stresses that every contribution to this journal is published free of charge.

## PRESENTATION OF MANUSCRIPTS

Contributions to "UFO PHENOMENA" should be classified by authors as one of the following:

- A) REVIEW ARTICLES
- B) ORIGINAL PAPERS (MODELS AND HYPOTHESES)
- C) CASE HISTORIES
- D) BOOK REVIEWS
- E) LETTERS TO THE EDITORS

All papers should be typed, double-spaced on one side only on good quality white paper - the max. size of each line must be of 15 cm - preferably of size approx 28x22 cm. The papers should contain an abstract of 200-300 words. This abstract should not be a mere summary of the work comprehensible only to people working in the area. Furthermore, it should underline the implication of this work in the understanding of UFO phenomena.

**TITLE:** The title should be chosen so that it conveys to the informed reader the particular nature of the contents he can expect from the paper. The first page of each paper should carry the title (main title underlined), the authors' names and the name of the Department, Institute or Association in which the research work was done.

**ABSTRACTS:** Each paper must include a summary of 200-300 words, as stated above. Papers in French should have also a full English summary, with an English translation of the title.

**KEY – WORDS :** A list of 5-15 key-words for indexing purposes *must* be given by the authors, after the Abstract.

CHAPTERS: ORIGINAL PAPERS (Models and Hypotheses) must be divided into chapters in the following order:

- A) Abstract
- B) Introduction
- C) Material and Methods
- D) Results
- E) Discussion
- F) References

REVIEW ARTICLES and CASE HISTORIES may be divided into Chapters at the authors discretion.

ILLUSTRATIONS: All illustrations (photographs, diagrams or graphs) should be in the desired final size. The proportions of the printed page (12x18 cm) should be borne in mind when authors are preparing the format of illustrations. Several figures should be grouped into a plate on one page.

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CAPTIONS : Each figure should be briefly and clearly described. Remarks like "For explanation, see text" should be strongly avoided. Captions are a part of the text and should be appended to it. Any lettering or annotation should be indicated on a tracing overlay or a photocopy of the original. All figures should be numbered in sequence.

REFERENCES : References must be limited to publications quoted in the text; they must be listed in alphabetical order, according to the surname of the first author, and be cited as numbers in the text according to the quotation. For Journal Papers, the following data must be successively reported: Surname and initial(s) of the first name(s) of the Author and all co-authors, year of publication in brackets, full title of the publication, or abbreviation of it, according to international usage, volume, issue and page number.

For example: - Poher C. (1976) - LUMIERES DANS LA NUIT 19, No. 158, 3  
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When a paper with more than two authors is quoted, all authors will be mentioned in the first quotation, but afterwards the first only will be mentioned, for ex. : (Schwarz et al., 1970).

Responsibility for accuracy of references rests with the author(s).

**SYMBOLS AND TERMINOLOGY** : With regard to the abbreviations, symbols and technical terms, the authors must use the international rules when they exist. If they do not exist, one may use the terminology of well known authors or treatises.

The editors of UFO PHENOMENA strongly recommend the development of *a uniform terminology* for descriptions and evaluations of UFO reports. Meanwhile, authors should always mention explicitly the terminology used, e.g. "The terminology followed is that used by ...", or "According to the classification of ...".

A list of uncommon abbreviations could be placed by the author(s) as a footnote on the first page of the article.

**FOOTNOTES**: They should be avoided; if essential, they should appear on the first page of the article.

**REPRINTS** : Reprints will be available on request, the cost depending on the number of copies required.

## **ABOUT KEY WORDS**

As you can see in the Instructions to Authors (pp. 4 ) a list of 5-15 key words is requested to authors for indexing purposes.

Looking at manuscripts so far submitted for publication we have yet to remark most of them do not meet this requirement.

This want is likely due to the fact our contributors did not receive the Miniature Issue of UFO PHENOMENA before writing their articles. On the other hand we think useful to summarize the meaning of this practice, typical of any scientific journal, for those still not familiar with it. Webster defines key word as "a significant word from a title or document that is used as an index to content".

Now through proper key words authors supply jointly to their papers the Subject Index and the information retrieval system as well could be prepared. Please refer to articles present in this issue at pp. 13 and pp. 72 for practical examples of key words use.

Some scientific journals point out the index terms have to be chosen from a **Thesaurus** (i.e.: a list of subject headings with a cross-reference system).

Thus we find the **Index Medicus** which collects the medical subject headings. All the same the **Chemical Abstracts Service Source Index** (American Chemical Society) is used in chemical and biochemical literatures.

In UFOlogy we lack a **Thesaurus** even if words as "abduction", "entity", or "teleportation" and so on are by now widespread and therefore potential index terms.

As clearly stated in the Instructions to Authors (pp. 5 ) one of UFO PHENOMENA goals is the foundation of a uniform terminology for descriptions and evaluations of UFO reports. The creation of a **Thesaurus** in UFOlogy is a legitimate part of this schedule. But for the actual accomplishment of this purpose we ask for the close cooperation of our most experienced contributors of the Advisory and Editorial Boards.

Suggestions and outlines in this sense are urged and should be sent to the EDITECS address.

# PHYSICAL ASPECTS

*REFERRING TO THIS SECTION WE  
HAVE NOT RECEIVED ANY  
CONTRIBUTIONS.*

# **GATHERING and PROCESSING of DATA**

ESSAY ON THE POSSIBLE CORRELATION BETWEEN THE  
GEOGRAPHICAL DISTRIBUTION AND THE DIRECTIONS  
OF UFOs BASED ON THE SPANISH WAVE OF 1968-1969\*

MIGUEL GUASP

*(Translated by Richard Heiden)*

*Received April 6, 1977*

ABSTRACT

A study of the frequency of occurrence and distribution of the flight directions of UFOs during the Spanish wave of 1968-1969 shows that, when the three parameters of direction, course, and frequency of occurrence of said direction, are considered as vectors, the resultant sum of these vectors indicates precisely the centers of maximum UFO information: that of aerial observations (NE Spain), when considering the directions in which the objects were seen to appear; and that of Type I cases (SW Spain), when considering the directions in which they were seen to disappear.

Some subsequent considerations show that the line which joins

**KEY-WORDS:** Flight Directions; Geographical Distribution;  
Vectors; Correlation; 1968 Iberian Wave.

both centers of information, NE-SW, seems to play an important part in the development of the geographical location of the sightings of the wave.

## MATERIAL

Studies concerning the UFO phenomenology frequently give tabulations of cases with the coördinates of the places of observation, so that interested people can graphically represent the geographic distribution of the events, and on many occasions such distribution is given in the same study.

Even though there have been plenty of attempts to explain said distributions by means of correlations with geomagnetic activity, geological faults, etc., little is known about their causes. The only acceptable discovery is due to Dr. Vallée, when showing with French cases—and later with other samples—that such distributions followed an inverse relationship to the population density. (See references 1 and 2.) Other data in this matter have been presented by Saunders (3) and Poher (4).

Nevertheless, this does not tell us anything about the structure of the distribution. In this sense our interest is to find an explanation without taking into account elements unrelated to the UFO phenomenology itself; that is, by using only parameters of the phenomenon. Specifically, this attempt is directed to show that a certain internal connection exists in the phenomenon in regard to the distribution of the flight directions of UFOs and the corresponding geographical distribution of sightings. My presumption that this occurs is based on the promising results obtained with the "Teoría de Procesos de los OVNIs" ("Theory of UFO Processes")(5).

The cases used in this study are given in Tables I and II. They correspond to the Spanish wave of 1968-1969, which is perhaps the most representative of the phenomenology in Spain, according to

the study carried out by Ares and López (6). Table I contains all the aerial observation cases (i.e., the Type I cases of the Vallée classification (7) are excluded) which offered the parameters necessary for this study. Table II contains the respective Type I cases of said classification.\* Both tabulations are taken from the study published by the cited authors.

TABLE I

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
001	07/0X/1968	23:10	-NE	VILLAFRIA (BURGOS)
002	07/02/1968	20:30	NW-SW	VILLAR DEL ARZOBISPO (JAEN)
003	07/02/1968	21:10	NE-	ALGORTA (VI/CAYA)
004	07/11/1968	23:30	N - S	EIBAR (GUIPUZCOA)
005	07/12/1968	19:40	NE-SE	BARCELONA (BARCELONA)
006	07/15/1968	16:00	SW-NE	BARCELONA (BARCELONA)
007	07/18/1968	20:10	S - N	MONZON (HUELVA)
008	07/24/1968	19:50	E - W	PICAMOIXONS (TARRAGONA)
009	07/30/1968	21:30	N -	BURGOS (BURGOS)
010	07/31/1968	21:30	N -	BURGOS (BURGOS)
011	07/31/1968	22:40	NW-SE	MANISES (VALENCIA)
012	08/XX/1968	19:20	- W	NAVIA (OVIEDO)
013	08/16/1968	02:20	NW-SW	SANTANDER (SANTANDER)
014	08/17/1968	19:30	W - E	PICASENT (VALENCIA)
015	08/19/1968	20:30	SW-NE	PUENTEDEUME (CORUÑA)
016	08/22/1968	N	S -	SARDINA DEL SUR (GRAN CANARIA)
017	08/23/1968	23:30	NE-SW	OLIVARES (SEVILLA)
018	08/24/1968	19:30	W - E	PICASENT (VALENCIA)
019	08/29/1968	21:50	-SW	ROCAFORT QUERALT (TARRAGONA)
020	08/29/1968	22:00	N - S	CASTELLON (CASTELLON)
021	08/29/1968	22:30	- S	BECI (CASTELLON)
022	08/30/1968	22:50	E - W	BARCELONA (BARCELONA)
023	08/31/1968	22:40	W - S	GANDIA (VALENCIA)
024	09/01/1968	20:00	- N	BARCELONA (BARCELONA)
025	09/02/1968	17:40	N - W	BARCELONA (BARCELONA)
026	09/05/1968	22:30	E - W	LA PALMA DEL CONDADO (SEVILLA)
027	09/06/1968	04:20	N -SE	BARCELONA (BARCELONA)
028	09/06/1968	10:00	E - W	CAÑADA DEL HOYO (CUENCA)
029	09/06/1968	20:30	- E	LAS PALMAS (GRAN CANARIA)
030	09/06/1968	23:30	N - S	VALLVIDRIERA (BARCELONA)
031	09/07/1968	NAM	E - W	BARCELONA (BARCELONA)
032	09/14/1968	00:50	W - E	SEVILLA (SEVILLA)
033	09/16/1968	20:30	N - E	MADRID (MADRID)
034	09/17/1968	N	- N	CIUDAD REAL (CIUDAD REAL)

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
035	09/18/1968	20:00	- E	TENERIFE (SANTA CRUZ DE TENERIFE)
036	09/18/1968	24:00	S - N	LAS PALMAS (GRAN CANARIA)
037	09/23/1968	22:00	SW-	CEUTA (CEUTA)
038	09/23/1968	NAM	N -NE	VALENCIA (VALENCIA)
039	09/25/1968	21:00	NW- N	ELIZONDO (NAVARRA)
040	09/27/1968	21:40	E - W	LAS PALMAS (GRAN CANARIA)
041	10/0X/1968	07:30	SE-NW	MELILLA (MELILLA)
042	10/02/1968	DAM	E - W	BAÑOLAS (GERONA)
043	10/04/1968	DAM	- S	EL FERROL (LA CORUÑA)
044	10/06/1968	06:30	E - W	LA LAGUNA (SANTA CRUZ DE TENERIFE)
045	10/09/1968	20:00	N - S	GIJON (OVIEDO)
046	10/12/1968	20:XX	NE-	ALTORQUETAS (TARRAGONA)
047	10/26/1968	18:30	N - S	SITGES (BARCELONA)
048	10/28/1968	06:30	N - S	LUARGAS (OVIEDO)
049	11/04/1968	04:00	-NE	EL GROVE (PONTEVEDRA)
050	11/05/1968	20:30	NE-NW	LEON (LEON)
051	11/06/1968	19:30	SW-NE	CASTELLBISBAL (BARCELONA)
052	11/17/1968	07:20	- S	VALLS (TARRAGONA)
053	11/21/1968	NAM	-SW	MADRID (MADRID)
054	11/22/1968	NAM	-SW	MADRID (MADRID)
055	12/01/1968	19:00	- E	SAN SEBASTIAN (GUIPUZCOA)
056	12/04/1968	15:00	- E	MONREAL (NAVARRA)
057	12/05/1968	19:50	E - N	CEUTA (CEUTA)
058	12/19/1968	NPM	E - W	ARANDECIA (NAVARRA)
059	12/19/1968	NPM	E - W	ARANDECIA (NAVARRA)
060	12/20/1968	N	- N	ORENSE (ORENSE)
061	01/01/1969	02:30	NW-SE	RIBARROJA (VALENCIA)
062	01/01/1969	21:00	SE-NW	EL FERROL (LA CORUÑA)
063	01/02/1969	20:00	- E	ALBACETE (ALBACETE)
064	01/02/1969	21:00	SE-NW	EL FERROL (LA CORUÑA)
065	01/07/1969	22:30	NE-SW	MONTORO (CORDOBA)
066	01/10/1969	08:00	S - N	MOGUER (HUELVA)
067	01/13/1969	08:30	E - W	LUGO (LUGO)
068	01/19/1969	21:20	- W	PORTUGUESE BORDER (BADAJOZ)
069	02/04/1969	N	E - W	CABEZA DE BUEY (BADAJOZ)
070	02/06/1969	NPM	E -	CASTELLBISBAL (BARCELONA)
071	02/07/1969	22:10	W - E	MADRIDEJOS (TOLEDO)
072	02/08/1969	22:10	NE-SW	MADRID (MADRID)
073	02/11/1969	20:30	- W	ALMENDRALEJO (BADAJOZ)
074	02/14/1969	08:40	SE-	LERIDA (LERIDA)
075	02/15/1969	NPM	W - E	SANGUESA (NAVARRA)
076	02/18/1969	22:30	- W	FUENCALIENTE (CIUDAD REAL)
077	02/28/1969	21:30	E - W	AV. IBERIA (PALMA DE MALLORCA)
078	03/XX/1969	02:00	SW-NW	GUADALAJARA (GUADALAJARA)
079	03/05/1969	21:30	W - N	VILLAFRANCA (SEVILLA)
080	03/06/1969	21:30	W - N	VILLAFRANCA (SEVILLA)
081	03/13/1969	20:30	NW-	TUDELA (NAVARRA)
082	03/17/1969	20:20	E -	GABO DE AJO (SANTANDER)
083	03/17/1969	20:30	NW-NE	CIRIEGO (SANTANDER)
084	03/17/1969	21:30	NE-	MADRID (MADRID)
085	03/19/1969	NPM	N - S	VILOVI DE ONAR (GERONA)
086	03/21/1969	06:00	S -	IBIZA (BALEARIC ISLANDS)
087	04/05/1969	03:30	SW-NE	SANTANDER (SANTANDER)
088	04/06/1969	17:30	- S	LEON (LEON)
089	04/12/1969	00:20	SW- E	SANTANDER (SANTANDER)

090	04/20/1969	21:00	- E	MONDOGNEO (LUGO)
091	05/10/1969	22:30	S - N	MADRID (MADRID)
092	05/13/1969	12:50	SW-NE	REUS (TARRAGONA)
093	05/21/1969	23:10	S - N	PUENTE DE UME (LA CORUÑA)
094	05/26/1969	21:30	S - N	VIGO (PONTEVEDRA)
095	06/08/1969	N	W - E	MARBELLA (MALAGA)
096	06/15/1969	22:20	N -	BADALONA (BARCELONA)
097	06/17/1969	00:50	NE-SW	MELILLA (MELILLA)
098	07/12/1969	23:00	NW-SE	VEDAT DE TORRENTE (VALENCIA)
099	07/14/1969	20:30	NW-SE	MATACHANA (LEON)
100	08/07/1969	22:00	N - S	TORREDEMBARRA (TARRAGONA)
101	08/07/1969	23:00	E - W	ALCOY (ALICANTE)
102	08/13/1969	20:30	E - W	ALICANTE (ALICANTE)
103	09/21/1969	NAM	NW-	ALCOY (ALICANTE)
104	10/30/1969	09:20	-NW	ESPARRAGUERA (BARCELONA)
105	12/03/1969	23:00	- N	MADRID (MADRID)

Column 1 indicates the order; column 2 the date of the observation; column 3 the time of the observation; column 4 the directions of appearance (origin) and of disappearance (destination); and, finally, column 5 the place of the event.

Note 1.—The third column will not be used, but it is convenient to include it.

Note 2.—When carrying out the statistical analysis of the directions of arrival and disappearance, if a case has only one of the two directional data, a certain criterion of approximation has been used: unless the report indicates the contrary, it will be assumed that there has been no change in direction during the observation; thus, the directions will be assumed to be linear. For example: -N will be taken as S-N; NE- , as NE-SW; etc..

Note 3.—In some cases, when the time of the observation is not known exactly, the following symbols have been used: NAM means night a.m. (between midnight and dawn); NPM means night p.m. (between 8:00 p.m. and midnight); DAM means day a.m.; and N means night.

The number of cases in Table I in which the UFO arrives from a given direction or disappears in a given direction can be seen in the following table:

TABLE Ia

	No. of cases, arrival from the	No. of cases, departure to the
E	22	14
W	15	22
N	19	16
S	12	16
NE	12	10
NW	10	7
SE	5	8
SW	10	12

TABLE II

<u>1</u>	<u>2</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>3</u>
01	07/26/1968	Palma de Mallorca	29	10/25/1968	Manacor
02	07/27/1968	San Mauricio	30	11/02/1968	Monegros
03	08/02/1968	Valdemanco	31	11/10/1968	Puerto de Espadón
04	08/02/1968	Gallicant	32	11/12/1968	Castillo de Alarcón
05	08/07/1968	Betanzos highway	33	11/14/1968	Las Novas—Zafra
06	08/15/1968	Brenes highway	34	11/29/1968	Boadilla del Camino
07	08/16/1968	Tivisa	35	12/0X/1968	Los Pallaresos
08	08/28/1968	Ucero	36	12/03/1968	Aceuchal—Dueñas
09	08/29/1968	San Sadurni D'Osmort	37	12/07/1968	Palencia
10	08/30/1968	Colloto	38	12/07/1968	Palencia
11	08/31/1968	Santiponce	39	12/11/1968	Romilla la Nueva
12	08/31/1968	Bollullos	40	12/16/1968	Aguilar del Campo
13	08/31/1968	Umbrete	41	12/21/1968	Burriana
14	09/06/1968	Castelldefels	42	12/31/1968	Cuacos de Yuste
15	09/06/1968	Tivisa	43	01/29/1969	Matadepera
16	09/11/1968	San Martí Tous	44	02/XX/1969	Sagunto
17	09/13/1968	Valverde de Leganés	45	02/16/1969	Bañolas
18	09/13/1968	Alcalá del Río	46	03/06/1969	Cabeso D'Or
19	09/16/1968	Guadalcanal	47	03/09/1969	Villar del Campo
20	09/21/1968	La Llagosta	48	07/04/1969	Ribarroja de Ebro

21	09/24/1968	Cedeira	49	07/06/1969	Aracena
22	10/07/1968	Salou	50	07/30/1969	Almeria
23	10/08/1968	Fonscales	51	08/XX/1969	Monte San Pedro
24	10/13/1968	Carmona	52	10/11/1969	Cape Cope
25	10/15/1968	S. Lúcar, Jerez	53	11/14/1969	Ceuta
26	10/15/1968	Carmona	54	11/24/1969	Esparza
27	10/16/1968	S. Lúcar, Jerez	55	01/05/1970	Santa Fe
28	01/24/1968	Aceuchal			

Column 1 indicates the order; column 2 the date of the observation; and column 3 the place of the event.

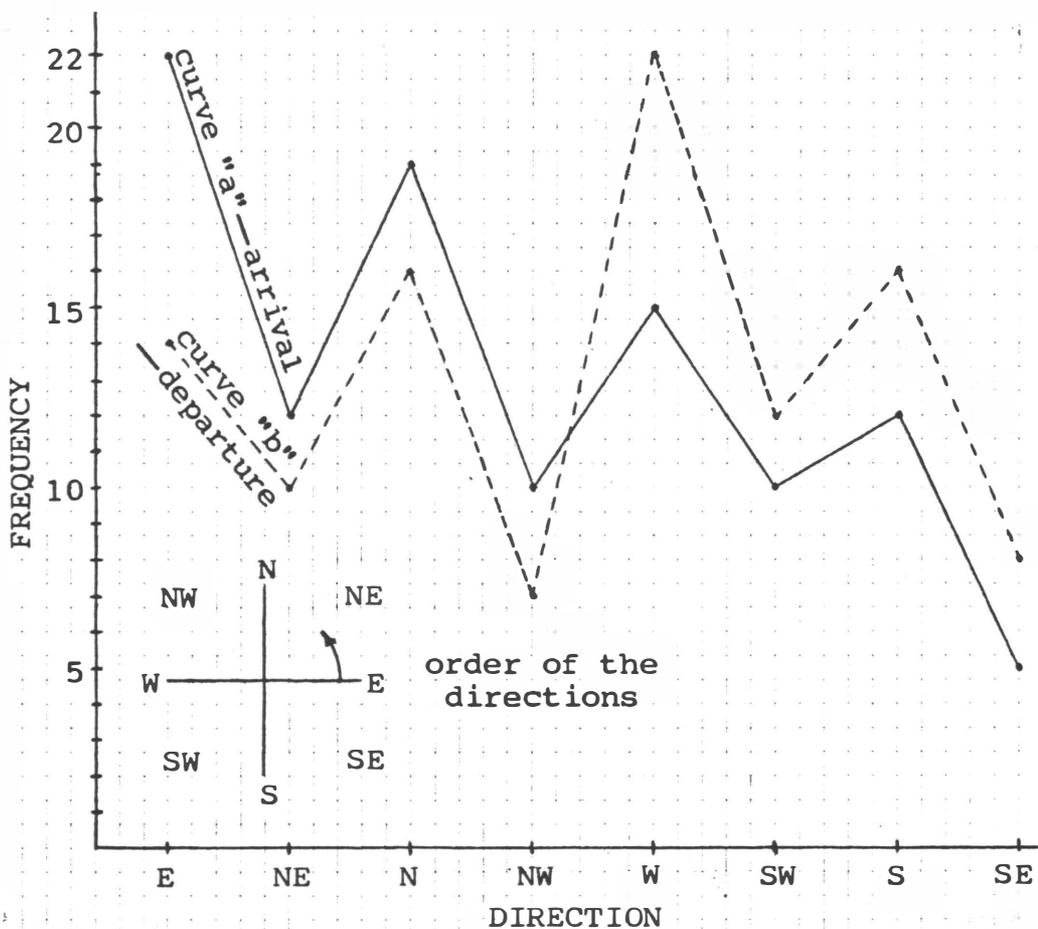
## METHOD AND RESULTS

RELATION BETWEEN THE DISTRIBUTION OF DIRECTIONS AND OF THE PLACES OF OBSERVATION: THE RESULT OF THE SUM.

After the basic outline of this attempt follows the immediate interest in obtaining a simple statistic of the frequency of observations for each direction: E, NE, N, NW, W, SW, S, and SE, selecting the eight directions most representative of the possible directions of the UFOs.

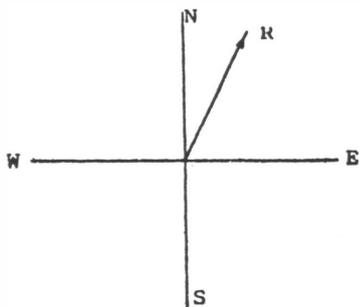
FIGURE 1

Distributions of the directions of arrival (curve "a") and of departure (curve "b")

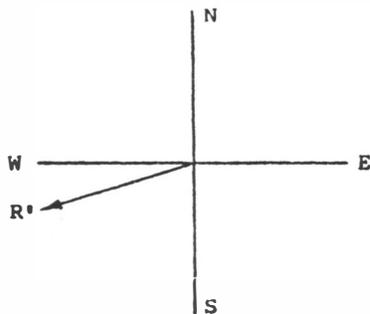


In reality it is only necessary to assign these two parameters—frequency and direction—a course in order to obtain a vector magnitude. Therefore we can represent the previous graph a new way (Figure 2a), as a set of vectors with the same origin whose course is away from the origin.

FIGURE 2



(a) Vector sum of the directions of arrival



(b) Vector sum of the directions of departure

It is clear that the vector sum of the directions of arrival gives a resultant,  $R$ , directed toward the NE, and consequently one can say, in short, that the greatest frequency of observations proceeds from the NE; but, precisely, as is seen in Figure 3, it is the northeast of the Peninsula (Barcelona, Tarragona, etc.) where the greatest accumulation of aerial UFO reports in the wave exists! That is to say, the vector sum of the directions of arrival indicates the greatest accumulation of cases of aerial observation in the Peninsula!

But the finds go beyond this; let us repeat the previous statistic with the directions of departure (see Figure 1, curve b). We observe, following the previous methodology, what the vector sum is (Figure 2b). We see that this points to the SW, another area of the Iberian Peninsula very familiar to Spanish ufologists, since it is precisely where the greatest accumulation of Type I reports exists! See Figures 4 and 5 (we add Figure 5 because it is the most representative distribution of Spanish Type I reports; see reference 8).

The general result we have arrived at seems to be important; the vector sum of the directions of arrival indicates the area of

**FIGURE 3**

Geographical distribution, by province, of the aerial observations

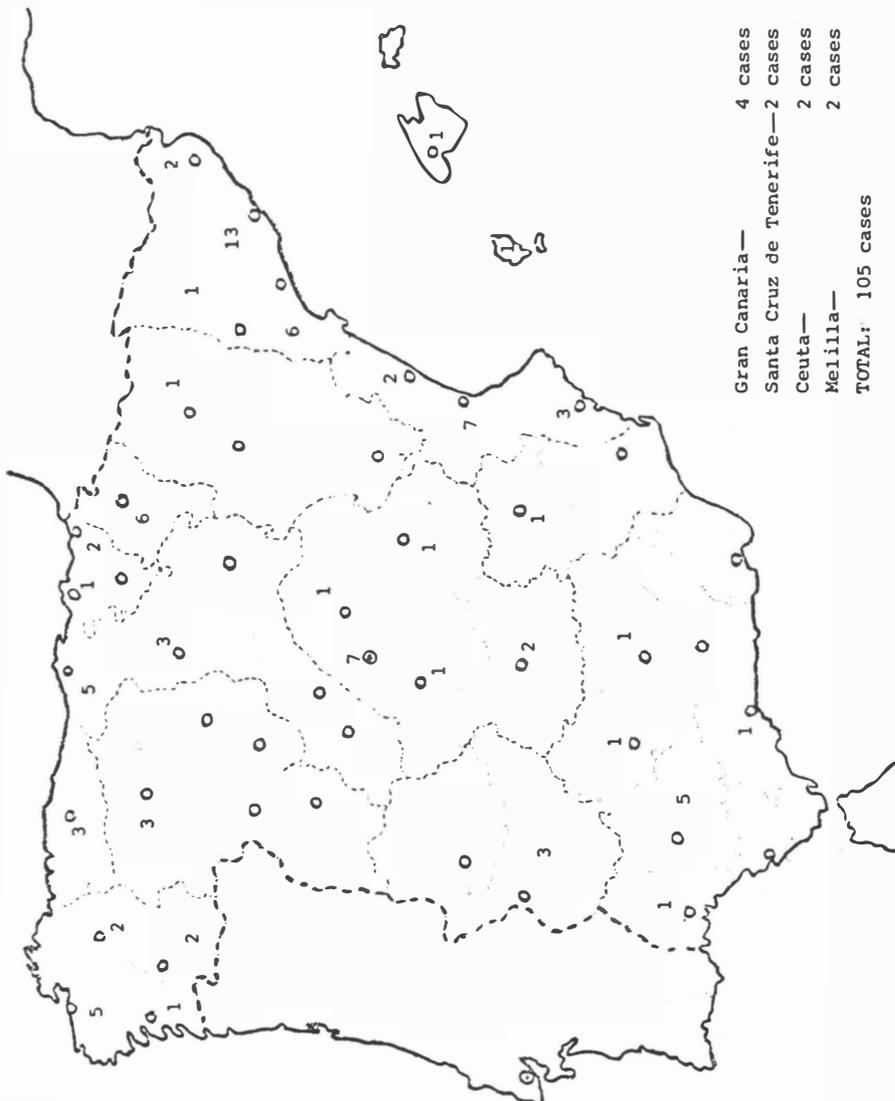
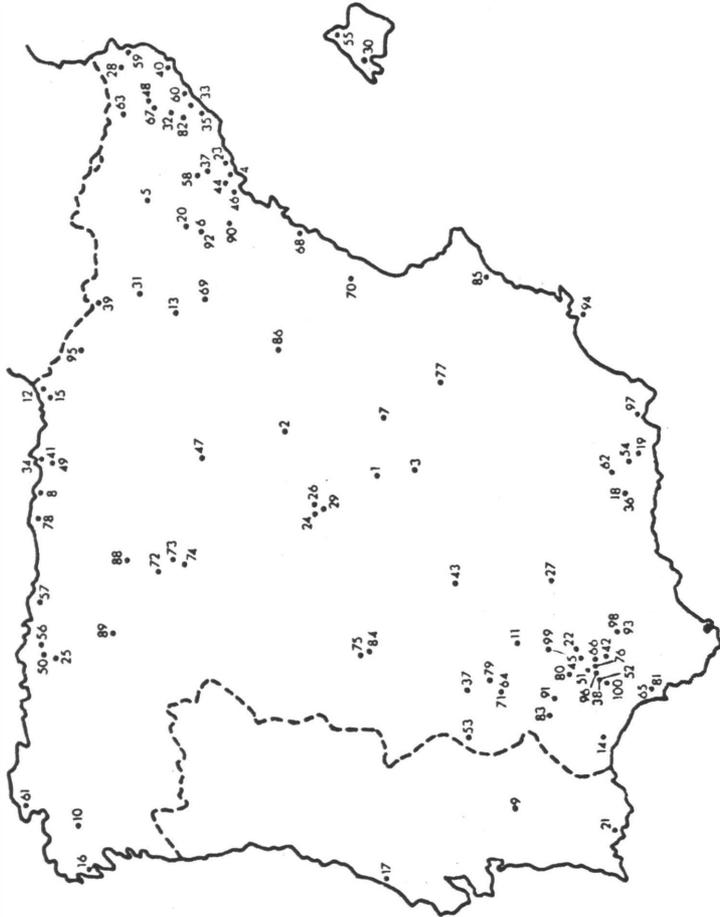




FIGURE 5

Geographical distribution of 100 Iberian landings  
(according to Ballester and Vallée)



greatest accumulation of aerial reports, while the corresponding sum of the directions of departure indicates that of Type I reports (when referring to this result in this article, we will call it the result of the sum).

#### THE FREQUENCY STAR

Even though the previous result can certainly be important, it does not tell us anything about the frequency of appearances in other parts of the Peninsula. That is to say, it only shows the condition that the vector sum of the directions indicates the greatest accumulation of UFO reports.

It would be interesting to check if the frequencies of the remaining directions agree with the frequency of observations in the area of the map which such directions indicate.

At first, the greatest frequency of directions corresponds to "pure directions" (N, S, E, W), and, nevertheless, the greatest number of cases are located at "hybrid directions" (NE, SW, etc.). Nevertheless, it is not difficult to guess that in the vector sum the greater contribution comes from the pure directions, and, precisely, by definition of sum, will contribute to the increase in frequency of the hybrid directions. Thus, while cases are located more frequently in hybrid directions, the distribution of directions is located more frequently in pure directions. There exists, then, a certain phase angle between the two due to the use of the above-mentioned vector sum.

One can sense from the above that any attempt to obtain the density of geographic distribution will have to be done in a manner such that the density,  $F$ , in a given area of the map, be given by means of the sum,  $H+G$ , of the frequencies of previous and subsequent directions, with which the above-mentioned phase angle can be avoided.

Therefore, in order to visualize this attempt, we can represent the directions by means of a certain "frequency star," a star whose length of its arms will indicate the density of the area obtained in the manner  $F=H+G$ . (See Figure 6.)

Similarly, another "frequency star" can be constructed from the distribution of directions of departure. This result is shown in Figure 7.

Both figures denote that the X-shaped distribution (in hybrid directions, that is) shows a greater agreement with reality, and also the "principal diagonal,"  $\delta$ , NE-SW, shows a certain evolution of the phenomenon: aerial observations in the NE to Type I observations in the SW. The arms of the principal diagonal,  $\delta$ , seem to be permutable, or, said another way, in regards to the principal diagonal, one can pass from the first frequency star to the second by rotating  $\delta$  around the secondary axis  $\delta'$ . (\*\*)

Beyond this the agreement with reality dissipates. The arm pointing SE in the first star has no satisfactory explanation, at least within the shores of the Iberian Peninsula. The same occurs with the small frequency indicated toward the E, which, even though it is a characteristic of the phenomenon in Spain, is not exactly a characteristic of the Iberian aerial observations of 1968-1969. Some other characteristics, such as the heavy density of aerial cases in the entire North in general, can be pondered by the student.

In summary, it can be said that the frequency star gives an important visualization of the results which lead to the vector addition of the directions, and to the evolution of the phenomenon in this sense. An exact determination of the density of cases in each area of the map is frankly not possible at the moment.

It will not have escaped the attention of the reader that the selection of the center of the star, or origin of frequencies, on the map, was arbitrary. We have selected the center of the Peninsula for it, for a greater visualization. The only thing which imposes the frequency star on the distribution is that, for example, if its NE arm indicates a maximum frequency, the NE of the Peninsula has a maximum density of cases, even though the representation of the star might not precisely indicate that area to have a dense UFO population. In fact, we have not even made the extremities of its most significant arms agree with those areas.

FIGURE 6

Frequency star obtained for the directions of arrival

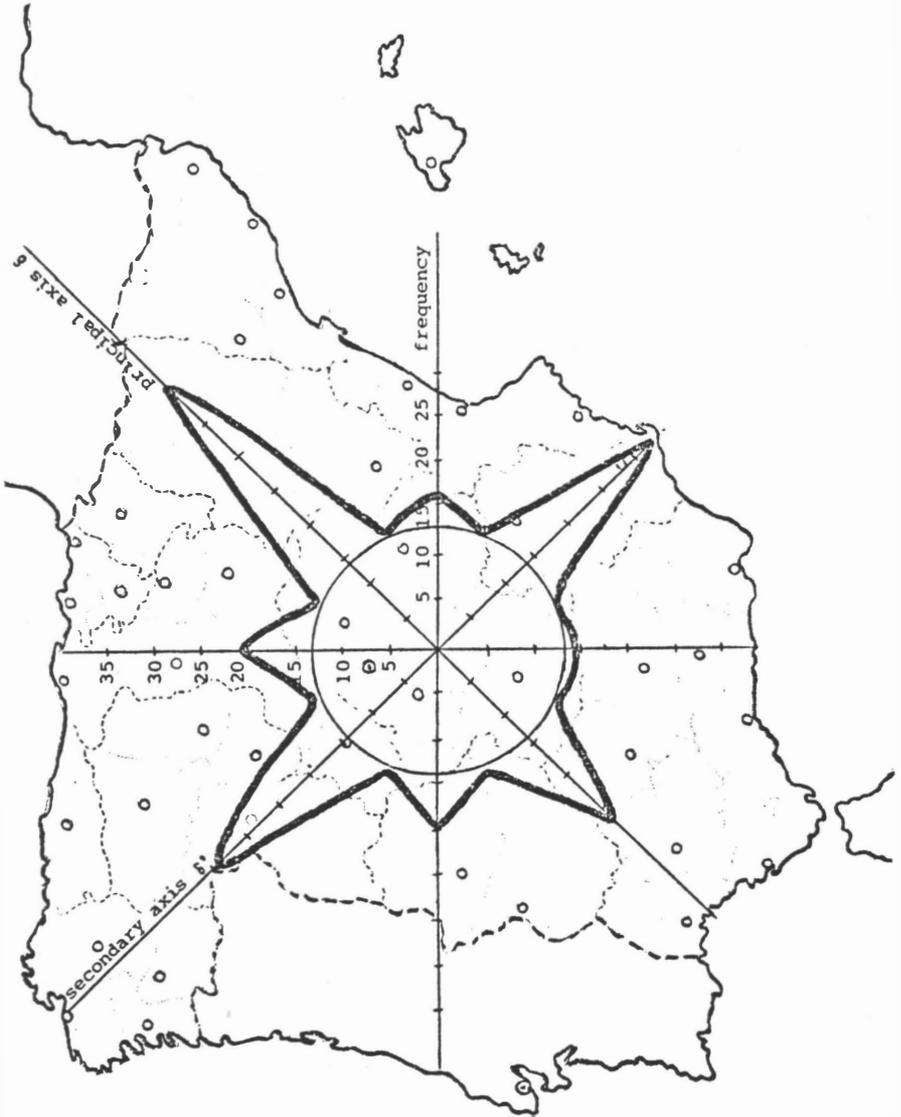
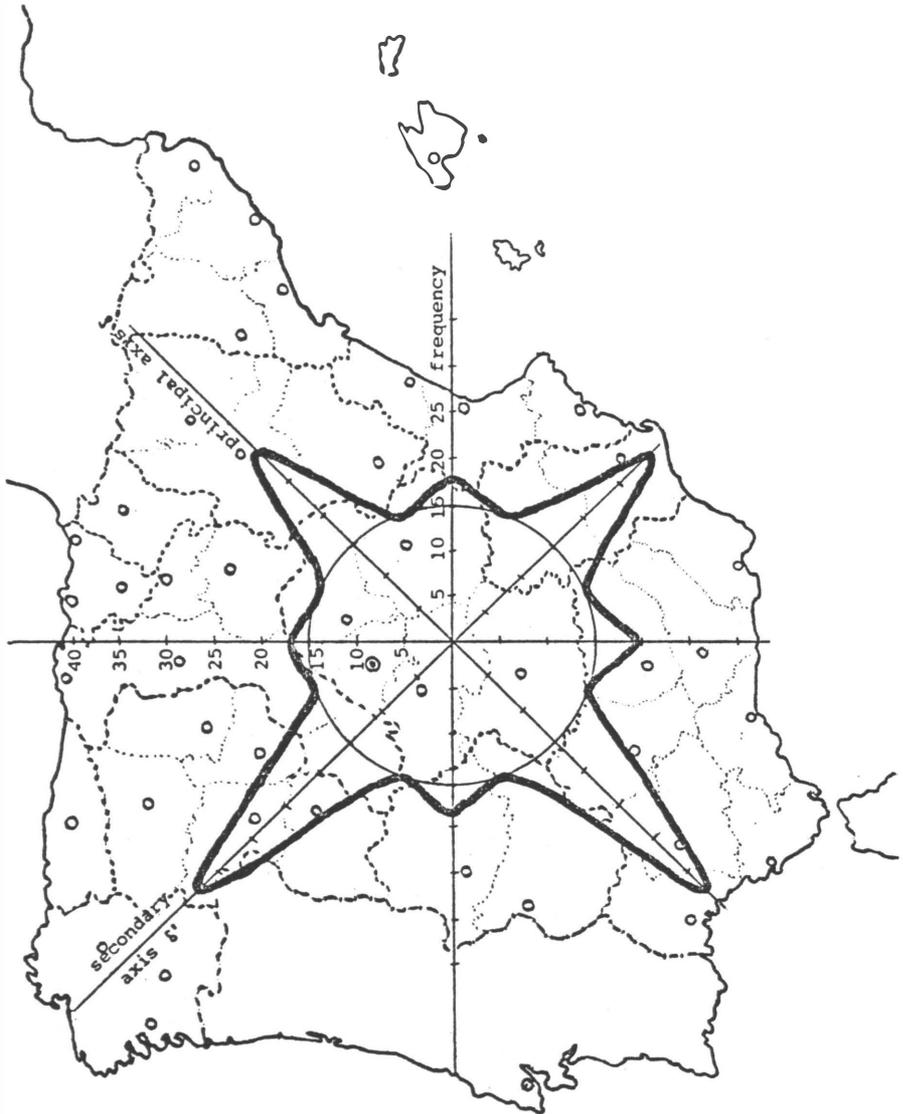


FIGURE 7

Frequency star obtained for the directions of departure



## DISCUSSION

### VARIATION OF THE "RESULT OF THE SUM" DURING THE WAVE

The fact that the knowledge of the distribution of directions gives us in turn a certain knowledge of the geographic distribution of the sightings—at least of the centers of maximum and minimum frequency—signifies an internal connection in the phenomenon with respect to the two parameters. One can now ask himself if the result is invariant at each moment of the wave, or, said another way, if at any moment the result of the sum is satisfied, or if, on the contrary, it is necessary to wait for the end for it to be valid. If the former is the case, a pattern of distribution of the phenomenon would clearly appear: given a particular moment of the wave, a new group of events should be distributed in a manner such that its directions maintain the result of the sum constant. At any rate, it is interesting to know what process the phenomenon follows until reaching the final result.

Figure 8 shows this evolution. It has been obtained by finding the sum of the directions for each interval of percentages—understand this to mean percentage of cases out of the total of the wave—and afterwards relating it to the final result by means of a simple quantification.

Both curves show the closeness to the final result in proportion as the percentage of cases out of the total of the wave increases. Clearly, for 100% the closeness is unity (value of 1 in the figure). Some considerations stand out in the figure:

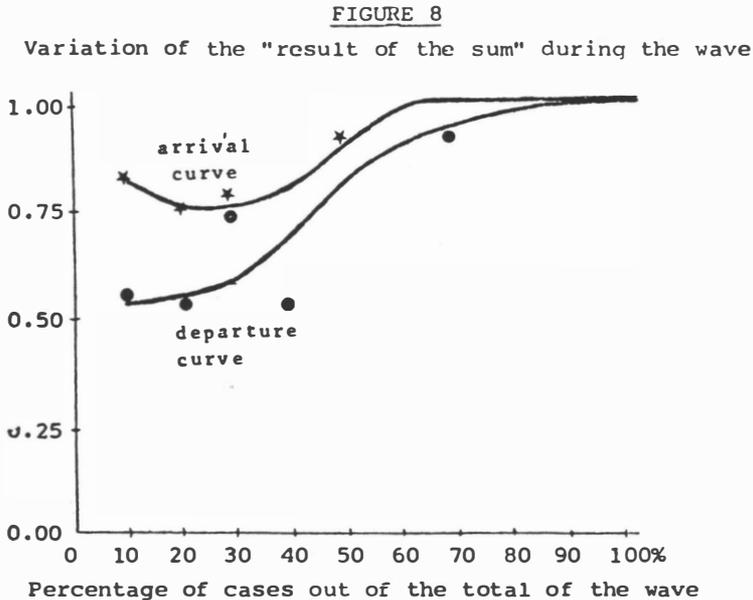
(a) The relation between the geographic and directional distributions is present throughout the wave, but the validity of the result of the sum fluctuates during it. In our particular case it can be appreciated that the above-mentioned pattern of distribution was followed when at least the first 60% of the cases of the wave were considered.

(b) The similarity between the two curves suggests that the causes which produce the distribution of Type I cases and the rest

of the observations are related internally.

(c) The curves show a certain symmetry in their evolution. The first 40% is related to the final result, but in a diffused manner; the last 40% gives the final result. But perhaps the most important thing is that this change is realized during only 20% of the sample—from 40% to 60%; that is to say, it seems that during a small part of the wave it undergoes a substantial change (and these results are the same for landings as for the other types of the phenomenon).

Nevertheless, it seems to be that in directions as well as in



the geographic distribution the principal (final) structure remains more or less constant for the first 60% of the wave, in the principal statistical elements—Barcelona, Sevilla, E and N and W and S—but it is the remaining elements which give the general form to the distribution.

In the first 40% of the cases—occurring in two months—the remaining elements are distributed diffusely, thus hiding the tendency of the principal elements. During the next 20%—about three months—the less important elements polarize in agreement with the principal tendency of the structure of the phenomenon; then the sample soon takes on the aspect of the principal tendency. The next 40%—that is, until the end of the wave, occurring in about a year—follows the principal structure in a constant manner until the end.

It all seems as if the principal tendency polarized the rest of the sample during the 40% to 60% period of the wave.

#### SOME FINAL CONSIDERATIONS

Perhaps there is a fundamental question that has assaulted the reader's mind. I refer to the following: why does a structure of this type depend on geographical or national boundaries? Or, said another way, could valid results be obtained by choosing a geographic area by chance, or by uniting the distributions of two different countries, for example of France and Spain?

Naturally, I now possess no answer to this question. To have it would suppose that those works which must be written in the future have already been written. Nevertheless, in my opinion, there is no proof that such structures depend on said boundaries. Follow-up studies must be undertaken to know for sure. One's first thought is that it would be difficult to unite the distributions maintaining their general form, precisely due to the geography of the two countries. Two things: in the first place we would have to be careful that the distributions correspond to the same wave; to collect that type of observations which are "parallel"—of Type I, for example;

orientated in the form of a principal diagonal (NE-SW), and it is curious that it is exactly in this direction where the still inexplicable BAVIC lies (9), and, even more curious if we remember that said diagonal seems to play an important part in the reconstruction of the rest of the geographic distribution. In the USA the distribution along hybrid components also seems to predominate, that is to say, along the two diagonals NE-SW and SE-NW, a result which shows the low frequency in the areas corresponding to the "pure directions" and the high frequency in those corresponding to the "hybrid directions," the same as occurs in Spain.

To sum up, it is possible that we have found a promising pattern in the study of the phenomenon; however, we strongly recommend that this study be repeated in other countries and with other waves.

I should point out, finally, that if indeed the "result of the sum" unquestionably follows from the analysis of the data, the proposition that the principal diagonal plays an important part in the reconstruction of the rest of the distribution could perhaps be affected by our subjective opinion, though I think that the proposition can contain great value. Time will tell. To have effected the process of study, tabulation, and cataloguing of cases under the same criterion; in other words, that the sample be homogeneous, as observations studied in the same country are; and, in the second place, we would have to be careful not to give more importance to the general form of the distribution than to the "result of the sum." We should carry out, therefore, a study of directions.

In any case, to leave this question unanswered should not reduce the importance of the results obtained, or distract our attention from them. These results seem to indicate to us that there exists a certain correlation between parameters characteristic of the phenomenon, ready to be revealed. The study of the physical aspects of the phenomenon thus acquires a new and relevant importance.

Nor should our confidence, in this sense, be dampened by the necessary limitations of this study. The form of the geographic distribution in Spain does not seem to be something inherent in the Peninsula. In France, for example, the phenomenology seems to be

#### NOTES:

(\*) Ares and Lopez have followed, however, a more ambiguous criterion than that followed by Vicente-Juan Ballester Olmos. For them Type I does not represent a landing, but rather any low-altitude case, and therefore the reports in this period do not identify completely with those of Ballester's landing catalogue (8).

(\*\*) The similarity between the two stars is accentuated even more, in a very considerable manner, if, following the previous rotation, another one of  $\delta$ ' around  $\delta$  is effected. Both stars now appear extraordinarily similar. The curious reader can verify this similarity by making this double rotation, by only joining the maps of Figures 6 and 7 by the side corresponding to the northern area of the Iberian Peninsula. With respect to any significance of this similarity, we prefer to reserve our opinion for the moment.

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ESPANA

This article has not been prepared especially for UPIAR. It is already appeared in the Spanish language (STENDEK, No. 23 Vol. 6 (1976) under the title "Situación Geográfica y Direcciones de OVNIs".

Anyway we think very interesting to present this work here, for the first time in English, in order to raise discussions among specialists.

## The «CE III»

*REFERRING TO THIS SECTION  
PAPERS RECEIVED DO NOT SATISFY  
WITH REQUESTED STANDARDS.*

# **PSYCHOLOGICAL and PERCEPTIVE ASPECTS**

## UFO APPEARANCE RECOGNITION AND IDENTIFICATION TEST PROCEDURE \*

RICHARD F. HAINES

*Received April 7, 1977*

### Introduction:

There are several reasons to obtain reliable information from a witness concerning the appearance of the unidentified flying object (UFO) perceived. The first is to be able to place its shape and details into defined categories so that correlations can be made with other sighting details from the same and other witnesses. Such categorization and classification may help us understand better the common elements, range of individual differences in perceived shapes, and many smaller details which might be important. Such details will likely go unreported if a less rigorous technique is used. The second reason is to learn more about the true nature of the UFO phenomenon. Should a fixed relationship exist between the shape and/or details of the UFO phenomenon and its function or "true" identity, a systematic method for categorizing such information will help uncover it. The procedure given here will also facilitate the computerization of perceived UFO characteristics which could make possible valuable statistical analyses.

Because we are still confronted by a phenomenon about which we know almost nothing we must not waste any opportunity to collect as much reliable observational information as possible. Laboratory research has shown that, under most situations, *recognition* of such details as an object's outline shape, gravitational orientation, and certain kinds of detail is easier and more accurate than is trying to recall these details entirely from memory. Indeed, others have already suggested the use of a somewhat similar shape recognition procedure (Shepard, 1968; Valley, 1968), however, no one has provided a systematic method for doing so which incorporates the findings of a review of eye witness UFO drawings or which allows for so many combinations of shapes and details.

The following seven steps should be followed which are shown in Figure 1.

### Step 1. "Draw the UFO"

Ask the witness to take a few minutes to remember as much as possible about what the UFO looked like. Try not to distract him during this first step. Ask him to draw the UFO on a clean piece of white (21.6 x 27.9 cm) paper oriented on the writing surface as he likes. Do not prompt or lead the witness in

\* This article has not been prepared especially for UPIAR. In fact at the beginning the main Author's aim was that to notify it among serious UFO investigators in USA. In this issue we are flattered to publish it hoping it could soon represent a practical and useful instrument for investigators use. This article is copyrighted by the Author.

any way. As soon as the drawing is completed have the witness include his name (or initials) and the following (record keeping) information in the upper left-hand corner.

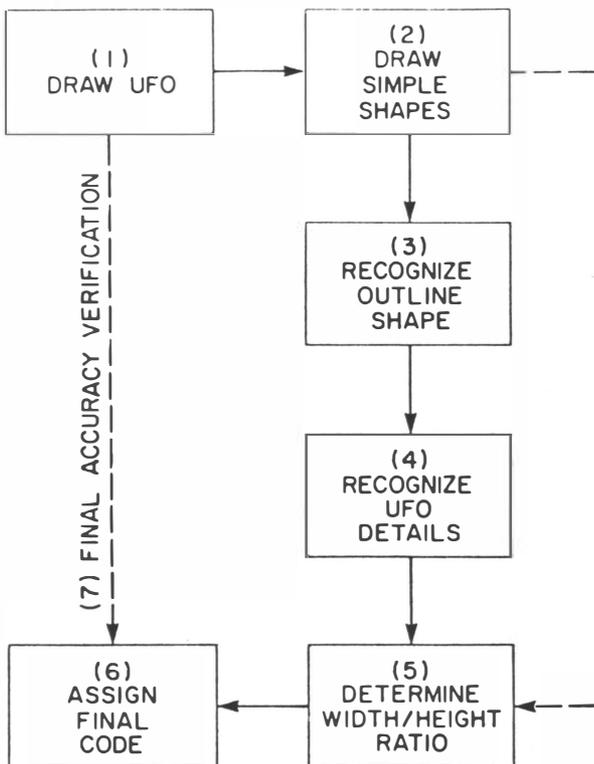
- Date of sighting
- Time of sighting [a.m.; p.m.; time zone]
- Location of sighting
- Date of drawing
- Arrow pointing up with respect to gravity

When this is finished take the drawing and turn it face down and proceed to the second step.

### Step 2. "Draw Three Simple Shapes"

Ask the witness to draw a *circle* of about 5 cm diameter anywhere he likes on a second piece of clean white paper. Repeat this for a *square* of about 8 cm on a side and an *equilateral triangle* of about the same

Figure 1. Diagram of Seven Steps to be Followed



size on the same piece of paper. Be sure to include the witnesses name or initials and an arrow indicating the orientation of the paper when the drawings were made. The arrow should always point away from the witness. When this step is finished turn the paper over and proceed to the third step.

### Step 3. "Recognize and Match UFO Outline Shape"

Once again ask the witness to try to remember what the UFO looked like. Then ask him to look through the various drawings in Figure 2 [note that there are three parts] and select one of the drawings or a combination of them which look most like the object he witnessed. *Any combination of shapes is possible*; the left-hand column labelled "top surface shape" (T) may be associated with one or more shapes from the middle column labelled "Mid-section shape" (M) and/or with one or more shapes from the right-hand column labelled "bottom surface shape" (B).

If the witness seems unclear about what constitutes the top and bottom of the UFO simply point out that the top is considered to be that part of the object which was above (with respect to gravity) an imaginary line lying along the largest dimension of the object. If the UFO remained steeply inclined (to a vertical line) simply orient the appropriate drawing of Figure 2 to the given inclination and let the left-hand column represent the highest (uppermost) portion of the UFO, etc.

Each shape selected from Figure 2 should be designated in the final code as a letter-number combination, for example T12. A perfect circle would be coded as T1B1. A long, thin diamond shape would be coded as T7B7, etc. If a mid-section separated the top from the bottom part of the UFO the letter M (for mid-section) would precede the appropriate number of a shape. Shape M1 should be used to indicate the presence of a thin straight line separating the top from the bottom. The concave (CC) and convex (CV) curvatures shown *do not* have to match each other exactly. For example, a T11M10 would be acceptable and would be interpreted *as if* the two curved surfaces matched; an M16B15 would, on the other hand, be both incorrect and ambiguous, unless the witness was extremely confident that this code designation was the best one possible. The right- and left-hand extremities of the mid-section may have been some shape other than square. Cell M13 provides capital letter codes for other shapes. Brackets should be used around such code letters.

Figure 2 (part a). Symmetric UFO Shapes

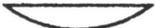
	T	M	B
	TOP SURFACE SHAPE	MID-SECTION SHAPE	BOTTOM SURFACE SHAPE
ROW 1			
2			
3			
4			
5			
6			
7			
8			

Figure 2 (part b). Symmetric UFO Shapes

	T TOP SURFACE SHAPE	M MID-SECTION SHAPE	B BOTTOM SURFACE SHAPE
9			
10			
11			
12			
13		NOTE: SHAPES M3, M10- M13, M22 MAY HAVE ROUNDED (R), POINTED (P), INDENTED (I), OR OTHER (O) SHAPED ENDS.	
14			
15			
16			

If only *one* of the shapes given in Figure 2 is selected by the witness as being representative of the entire UFO outline he perceived, Figure 2 provides for recognition of 24 times 3 or 72 different shapes. If *any two* shapes are chosen in any combination, a total of 5,112 different combinations are available. If *any three* shapes are selected in any combination a total of 2,024 combinations are available.

Figure 2 (part c). Symmetric UFO Shapes

	T TOP SURFACE SHAPE	M MID-SECTION SHAPE	B BOTTOM SURFACE SHAPE
ROW			
17			
18			
19			
20			
21			
22			
23			
24	UPPER PART VERY UNCLEAR (SEE TEXT)	MIDDLE PART VERY UNCLEAR (SEE TEXT)	LOWER PART VERY UNCLEAR (SEE TEXT)

★ *How to deal with a UFO which changes shape continuously:* If the witness claims that the UFO appeared to change its outline shape during the sighting the best procedure to follow would be to ask him to select from Figure 2 (as described above) the basic appearance of the object at each of a number of points in time and/or space. In order to record such a response the investigator should (first) draw a straight line on a clean piece of paper inserting small "tick" marks along the line to indicate time intervals. (Second) insert the UFO shape code by each tick mark as per the above procedure. (Third) write the number of seconds, minutes, etc. which occurred between each successive tick mark.

★ *How to deal with indistinct or hazy UFO outlines:* This is a relatively common feature of UFO sightings. In some cases a mist appears to shroud the object. A special "H" code is used to indicate the degree of indistinctness. Table 1 gives a brief description of this H code. Note that *this is the only code symbol which is entirely omitted from the final code if the UFO appears complete sharp.*

Table 1. H Code Description for Indistinct Outlines

H1	— Only slightly indistinct; as the Moon appears through a thin, high altitude ice crystal layer. The edge is still relatively sharply defined against the background.
H2	— Moderately hazy edge; as an automobile headlight appears through medium fog. Light scatter enlarges the luminous source and makes its edges quite hard to distinguish from the background.
H3	— Very indistinct edge; as a small, intense light appears at a distance through dense fog. Only a patch of luminance is seen. No outline or edge of the original source of light can be seen. Neither the size or shape of the UFO can be determined, only its presence. [Note: use of this code would place the other shape code information in some doubt unless the UFO were subsequently seen clearly].

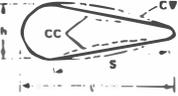
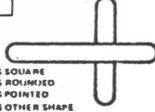
★ *How to deal with asymmetric UFO shapes:* In those cases where the object did not appear to be symmetrical the witness should be shown the shapes provided in Figure 3 and then asked to try to select the one which seems most similar to the shape remembered<sup>3</sup>. Referring to the V1 shape shown in the upper left-hand corner of this figure, the two linear dimensions [height (h), and length (l)] and the two side designations [convex (CV) and concave (CC)] must be included in the shape code when necessary. A dash should precede this code information. An egg-shaped UFO would be coded as V1-CV(l4, h1), for instance, if the length was about four angular measurement units and the height one. If no special side designation is included it will be assumed that the UFO appeared very similar to the shape indicated by the basic code of Figure 3.

The remaining "V" designations should be used for special cases as necessary. An attempt has been made to provide a relatively consistent set of symbols and alphabetic letters so that any symbol or letter may be used with any shape code as necessary.

It should be emphasized that *it is the silhouette of the object seen which determines the correct choice of the symmetric or asymmetric shape selected from Figures 2 or 3.* This basic operating principle is necessitated by the fact that a three-dimensional object may assume an extremely large number of shapes depending upon the direction from which it is seen. Thus, to help make this shape recognition technique more reliable the field investigator should have the witness select a shape from Figures 2 or 3 based only upon the remembered overall (silhouette) shape of the object and *not* what it would have looked like at another (e.g., side view) vantage. Once this is done the witness should be asked to judge the approximate "viewing angle" (X) at which he viewed the object. For example a UFO seen directly from below would be coded as X90 (for 90° arc). A UFO seen directly from the side would be coded as X0 (omitting the degree symbol), etc.

★ *How to deal with remembered UFO shapes which are not found in Figures 2 or 3:* The single most acceptable method is to urge the witness to try to describe the overall appearance of the UFO in terms of specific similarities and differences compared to one or more of the shapes provided in Figures 2 or 3. Such information should be tape recorded whenever possible and then transcribed on the reporting form as necessary.

Figure 3. Asymmetric UFO Shapes

<p>V1- <input type="checkbox"/></p> 	<p>V2- <input type="checkbox"/></p> 	<p>V3- <input type="checkbox"/></p> 
<p>V4- <input type="checkbox"/></p> 	<p>V5- <input type="checkbox"/></p> 	<p>V6- <input type="checkbox"/></p> 
<p>V7</p> 	<p>V8</p> 	<p>V9</p> 
<p>V10- <input type="checkbox"/></p> <p>(G) - RIGID SHAPE (FL) - (CHANGING) FLEXIBLE SHAPE - INSERT IN BOX -</p> 	<p>V11- <input type="checkbox"/></p> 	<p>V12</p> 
<p>V13</p>  <p>GROUPING OF DOTS OR LUMINOUS SOURCES.</p>	<p>V14</p> 	<p>V15</p> 
<p>V16- <input type="checkbox"/></p> <p>(S) - ENDS SQUARE (R) - ENDS ROUNDED (T) - ENDS POINTED (O) - ENDS OTHER SHAPE</p> 	<p>V17</p>  <p>SIMILAR TO M7 BUT WITH PROTUBERANCE</p>	<p>V18</p> 
<p>V19</p> 	<p>V20- <input type="checkbox"/></p> <p>SPECIFY SHAPE IN BOX AS NECESSARY (SH) - SHARP POINT (S) - SQUARE (C) - CIRCULAR (POL) - POLYGON (L) - LINE (O) - OTHER</p> 	<p>V21</p>  <p>STAR LIKE SHAPE</p>
<p>V22</p> 	<p>V23 - POINT SOURCE TOO SMALL TO SEE SHAPE V24 - HAZY LUMINOUS AREA, CONSTANTLY CHANGING SHAPE. V25 - POLYGON WITH UNEVEN No. SIDES.</p>	<p>V26 - MORE THAN ONE SHAPE BUT APPARENTLY CONNECTED TOGETHER V27 - ONLY CIRCUMFERENCE VISIBLE, NO INSIDE V28 - ANOTHER SHAPE NOT SHOWN HERE.</p>

<sup>3</sup>The calculated value of "R" (determined in step 5) becomes particularly important if the UFO is asymmetric. Note that the h and l dimensions shown in shape V1 of Figure 3 can be used with almost all of the V series.

#### Step 4. "Recognize UFO Details"

Up to this point nothing has been said about any visual details on the object. Now is the appropriate time to do so. Begin by asking the witness to look at the various UFO detail drawings given in Figure 4 and to select any which look similar to what he perceived. If some detail was seen to move with the UFO but was not (apparently) attached to it simply insert the letters (nc), for "not contacting", after the detail code.

It should always be remembered that nothing is known for sure about the function of any UFO detail. Therefore it is misleading to refer to a thin, straight line coming out of the surface of a UFO as an "antenna." And, a broad, transparent bulge on the top of a UFO may or may not be a "dome" in the commonly accepted sense of the word. It is always better to refer to such details in a general or generic way or, better yet, only by their symbolic code number. Such an approach will not only help to improve the investigator's credibility but will help to reduce various psychological associations in the witnesses mind.

Referring to Figure 4, it should be noted that the many code letters in brackets found in several boxes may be used whenever such useage would more fully and/or accurately describe the object. In only a few cases is the same letter used in a different way; the particular type of detail with which these letters can be associated clarify their correct meaning.

To specify the number of similar details seen on a UFO simply insert this number within brackets (cf. detail P4 of Figure 4a). Thus, an A4 designation indicates that *only one* horizontally oriented oval detail was remembered; an A4(3) designation indicates that three separate ovals were remembered. A UFO with a regular, geometric arrangement of circular apertures or luminous sources would be coded by A1; if these apertures or sources were randomly arranged the T4 would be used. Finally, the P13 code should be used when the witness cannot recognize any detail of Figure 4 as being similar to what he perceived. In such cases the investigator should simply record a verbal description of the detail.

#### Step 5. "Determine the Width to Height Ratio of the UFO's Outline"

There is another potentially useful dimension by which each outline shape should be quantified, namely, the width (w) to height (h) ratio (R). This ratio should be determined as independently as possible from the preceding steps by not allowing the witness to refer (visually) to what he has already drawn. The value "R" indicates that the UFO appeared to be R times as wide as it was high (thick).

The field investigator should find out what the value of R is by having the witness make as many sketches as necessary of the body of the object until he is satisfied with the final w/h ratio. Any top or bottom protuberances (e.g., D type shapes of Figure 4) should *not* be included in making this measurement unless it is certain that the protuberance was a part of the body of the UFO. The investigator may measure and calculate R at this time or later as appropriate. This piece of paper should be kept with the others. The original drawing obtained in Step 1 should also be measured for a second "check" value of R, however, this should be done by the investigator at a later time. The size of the difference between the two values of R is also a potentially valuable piece of information for later analysis. This brings us to the sixth step.

#### Step 6. "Assign the Final Shape/Detail Code"

The accurate assignment of a symbolic code to the UFO's outline shape and associated details can greatly facilitate later categorization and computerization of the information. When such a coding procedure is used by the majority of UFO field investigators a great deal of potentially useful data will become available for analysis. The present coding procedure has been developed with as much flexibility and provision for future additions as is possible.

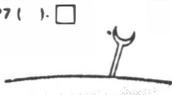
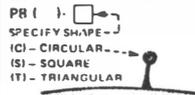
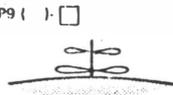
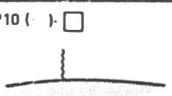
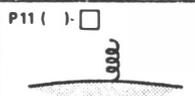
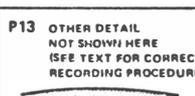
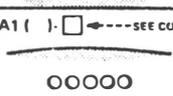
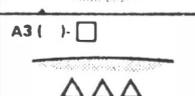
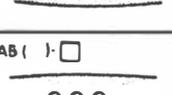
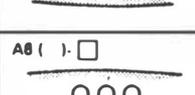
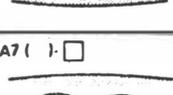
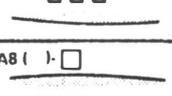
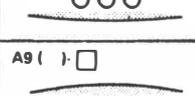
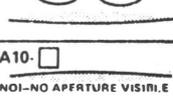
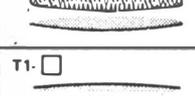
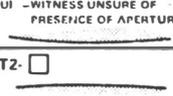
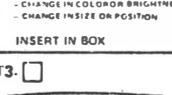
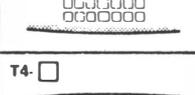
Figure 4 (part a)

UFO DETAILS

DOMES OR SYMMETRICAL PROTRUSIONS - D	D1- <input type="checkbox"/> ADD SYMBOL HERE AS NECESSARY  MAIN UFO BODY	D2- <input type="checkbox"/> 	D3- <input type="checkbox"/> 
	D4- <input type="checkbox"/> 	D5- <input type="checkbox"/> 	D6- <input type="checkbox"/> 
	D7- <input type="checkbox"/> 	D8- <input type="checkbox"/> 	D9- <input type="checkbox"/> 
	D10- <input type="checkbox"/> 	D11- <input type="checkbox"/> 	D12- <input type="checkbox"/> 
	D13- <input type="checkbox"/> 	D14- <input type="checkbox"/> 	D15- <input type="checkbox"/> 
	ADDITIONAL SYMBOLS SEL - SELF LUMINOUS TR - TRANSPARENT INT - MOMENT SEEN INSIDE L3 - STRUCTURE CHANGED IN SIZE OR SHAPE INE - RECESSED (e.g. D 9) INSERT IN BOX	DO - NO DOME VISIBLE DD - ANOTHER SHAPE NOT SHOWN HERE 	DU- <input type="checkbox"/> UNATTACHED DOME - SPECIFY SHAPE WITH CORRECT CODE 
	P1 ( )- <input type="checkbox"/> THIN STRAIGHT LINE INDICATE NUMBER OF PROTRUSANCES WITHIN BRACKET (DITTO DITTO) 	P2 ( )- <input type="checkbox"/> 	P3 ( )- <input type="checkbox"/> THIN CURVED LINE 
	P4 ( )- <input type="checkbox"/> 	P5 ( )- <input type="checkbox"/> 	P6 ( )- <input type="checkbox"/> 

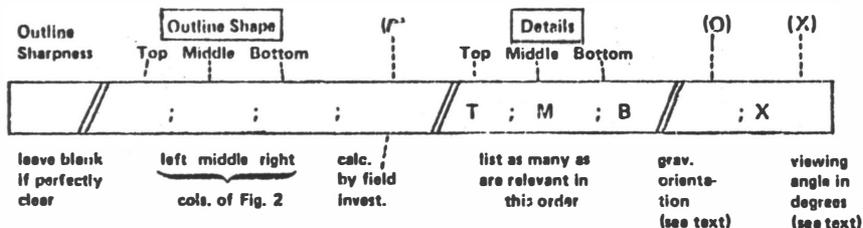
Figure 4 (part b)

UFO DETAILS

ATTACHED PROTUBERANCES - P	P7 ( )- <input type="checkbox"/> 	P8 ( )- <input type="checkbox"/>  SPECIFY SHAPE - (CI) - CIRCULAR (SI) - SQUARE (TI) - TRIANGULAR	P9 ( )- <input type="checkbox"/> 	
	P10 ( )- <input type="checkbox"/> 	P11 ( )- <input type="checkbox"/> 	P12- <input type="checkbox"/>  (NOI) - NO DETAIL VISIBLE (II) - VISIBLE INTERMITTENTLY (I) - FOOD THROUGH (HI) - HUMAN HANDS SEEN IN OR UPON OBJECT	
	ADDITIONAL SYMBOLS (FI) - DETAIL EXTENDING IN/OUT (BI) - LUMINOUS RAYS/EMITTED (MI) - DETAILS TOO NUMEROUS TO COUNT (SL) - SELF LUMINOUS (VI) - DETAIL VERY UNCLEAR BUT MOST LIKELY INSERT VI INSERT IN BOX	P13 OTHER DETAIL NOT SHOWN HERE (SEE TEXT FOR CORRECT RECORDING PROCEDURE) 	A1 ( )- <input type="checkbox"/> ←---SEE CODE 	
APERTURES OR SURFACE SOURCES - A	A2 ( )- <input type="checkbox"/> 	A3 ( )- <input type="checkbox"/> 	A4 ( )- <input type="checkbox"/> 	
	A5 ( )- <input type="checkbox"/> 	A6 ( )- <input type="checkbox"/> 	A7 ( )- <input type="checkbox"/> 	
	A8 ( )- <input type="checkbox"/> 	A9 ( )- <input type="checkbox"/> 	A10- <input type="checkbox"/>  (NOI) - NO APERTURE VISIBLE (II) - VISIBLE INTERMITTENTLY (UI) - WITNESS UNSURE OF PRESENCE OF APERTURE	
	ADDITIONAL SYMBOLS (SL) - SELF LUMINOUS (MI) - MOVEMENT SEEN WITHIN APERTURE (CI) - CHANGE IN COLOR OR BRIGHTNESS (LI) - CHANGE IN SIZE OR POSITION INSERT IN BOX	T1- <input type="checkbox"/> 	T2- <input type="checkbox"/> 	
	T3- <input type="checkbox"/> 	T4- <input type="checkbox"/> 	T5- <input type="checkbox"/> 	

The basic layout format for the code is shown below in Figure 5.

Figure 5



Three *double* (diagonal) slashes must be used in every complete code to clearly separate basic sections. In addition, *semicolons* are to be used to separate the "Outline Shape" codes for the top, middle, and bottom from each other and also to separate the T; M; B; detail codes. If there are two or more detail codes for the Top (for example) use a *comma* to separate each one. A set of *brackets* should always be used to indicate the number of similar details. Finally a > (larger than), = (same size as), or < (smaller than) may be used in place of a comma to specify the relative size of one detail to another. This code format does not allow one to specify the spatial location of any detail on a UFO.

The gravitational orientation (O) code is to be used to specify the orientation in space of the UFO with respect to the horizontal. The object's longitudinal axis defines one side of this angle. Always try to obtain an estimate of O which is accurate to about five degrees arc. *Never leave the orientation space blank.* If the UFO was seen parallel to the level ground insert 0. If it was banked up 90° arc to the ground, insert 90 (omit symbol for degrees).

The viewing angle (X) has already been discussed. Again, this angle should not be left blank but should be estimated by the witness to as great an accuracy as possible. Note that the letter X should be inserted in the code just before the estimated angle.

### Step 7. "Final Verification of Code Accuracy"

This is, perhaps, the most crucial of all the steps for it requires a certain degree of prior experience in the field investigator in order to *correctly* obtain the data in Steps 1 through 6. While the verification of the final code should be done by the field investigator it should also be cross-checked by someone else at a later time (assuming that the shape and detail codes were correctly recorded by the original investigator). Referring to Figure 1 it may be seen that the dashed arrow from step 1 indicates that the *initial accuracy check* is accomplished by comparing each and every feature drawn by the witness (from step 1) with the final code. Only the "H" code for hazy outline shapes may not be apparent in the original sketch. Discrepancies between the sketch and the code *must be clarified at this time!* The *second accuracy check* should be based upon a careful comparison between the UFO outline shape recognized by the witness (from Figure 2 or 3) and its symbolic code. The *third accuracy check* should be between each of the details remembered and their respective symbolic codes found in Figure 4. The *fourth accuracy check* should be for the calculated value of "R" using both the witnesses original sketch and later drawings which were made for this express purpose (see Step 5). Regardless of the possible discrepancy between these two values for R, the value found during step 5 should be recorded in the final code.

The three simple shapes obtained in step 2 are useful in assessing such perceptual characteristics of the witness as: (1) basic drawing ability, (2) eye-hand coordination, tremor, etc., (3) the overall "Gestalt" awareness of objects in terms of its "closure," "goodness of figure," "straight lines," etc. and, (4) ability to follow directions. In addition, various psychological evaluation techniques may be used to evaluate different cognitive and emotional characteristics of the witness. Of course he should not necessarily be told these reasons for carrying out step 2.

#### Field Investigator Training in This Technique:

The ultimate reliability of this UFO Appearance Recognition and Identification Test Procedure will depend upon the degree to which each user faithfully follows each step. In order to help the reader learn to apply these seven steps correctly, a simple, self-teaching procedure is given below. The reader should assume that step 1 has been completed by the witness and that his drawing is that provided in Figure 6 on the following page. The reader should follow through steps 2 through 7 and determine the correct code. Then he should compare his code with the code that is found near each of the four examples in Figure 6. The complete codes given in Figure 6 have been assigned by several independent judges who are thoroughly familiar with this procedure.

I hope that this technique will further enhance the objectivity of future UFO studies and I invite comments on how this UFO Appearance Recognition and Identification Test Procedure might be improved. Such comments should be sent to the author at the following address: 325 Langton Avenue, Los Altos, California 94022, USA.

#### References Cited:

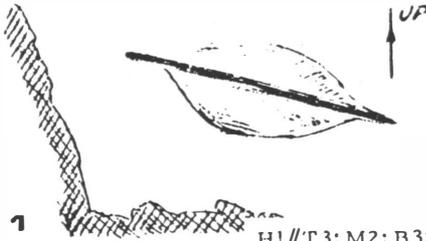
- Shepard, R.N., Some psychologically oriented techniques for the scientific investigation of unidentified aerial phenomena. In (Anon., *Symposium on Unidentified Flying Objects*, Hearing before the Committee on Science and Astronautics, U.S. House of Representatives, 90th. Congress, 2nd. Session, No. 7, July 29, 1968).
- Valley, G.E., Some considerations affecting the interpretation of reports of unidentified flying objects. In (Gillmor, D.S. (Ed.), *Scientific Study of Unidentified Flying Objects*, Bantam Books, New York, 1968).

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I am grateful to Jim McCampbell, Ray Fowler, and Troy Challenger for their helpful comments on this procedure and also to Peri Cline for her patient work in cataloguing many eye witness drawings. This paper is part of a larger manuscript on the subject of perceptual aspects of unidentified flying objects.

1976, All rights reserved

• Figure 6. Four UFO Shapes For Which Codes Have Been Assigned



Reference: R. Hall, The UFO Evidence, NICAP, Wash. D.C., 1964, page 93.

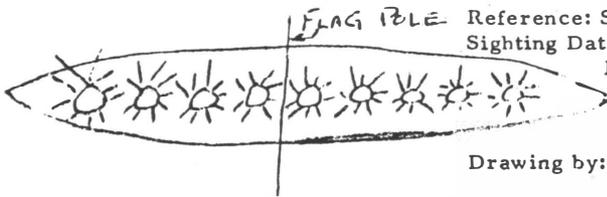
Sighting Date: 1/16/50

Location: Trinidad Isle, Brazil

Drawing by: artist from photo.

1

H1//T3; M2; B3; 2.90//TP12(NO); BP12(NO)//14; X0



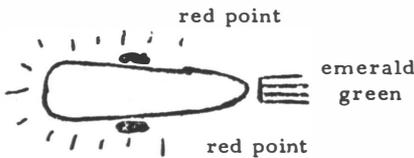
Reference: Skylook, March, 75  
Sighting Date: 1/12/75

Location: Stonehenge Apartment New York

Drawing by: eye witness

2

//B13; 6.26//TP12(NO); MA1(9)-SL; BP12(NO)//0; X0



Reference: Hobana & Weverbergh, UFOs From Behind the Iron Curtain, Bantam,

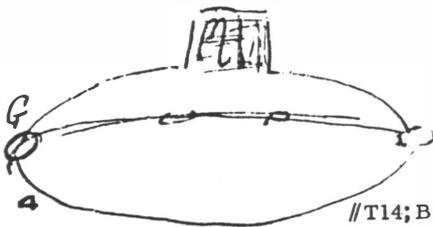
Sighting Date: 6/1/69

Location: Bucharest, Rumania

Drawing by: eye witness  
(engineer)

3

//V2; 3.43//TDU-D12(SL); BDU-D12(SL)//0; X0



Reference: Skylook, Sept., 75

Sighting Date: 7/4/75

Location:

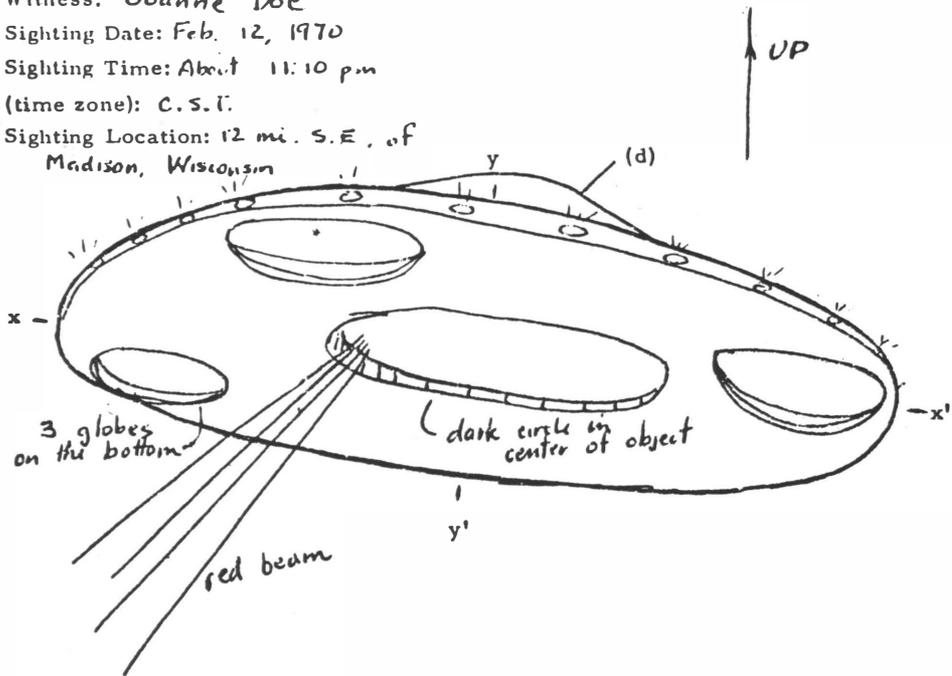
Drawing by: eye witness

4

//T14; B12; 2.61//TD7; MA1(4)(SL)//0; X10

Figure 7. Hypothetical UFO Drawing to be Assigned a UFO Code

Witness: Joanne Doe  
 Sighting Date: Feb. 12, 1970  
 Sighting Time: About 11:10 pm  
 (time zone): C. S. T.  
 Sighting Location: 12 mi. S.E. of  
 Madison, Wisconsin



Notes:

1. This UFO drawing is relatively typical of many eye witness drawings of an aerial object which is viewed from some oblique angle and not directly from the side or above. The field investigator should not assume anything about the geometric shape of the UFO upon which this type of drawing is based, for example it is impossible to tell if the bottom surface is flat, concave, convex, or some other form. Likewise, it is unwarranted and incorrect to assume that the rounded protrusion labelled (d) in Figure 7 is anything more than the size of the area visible in the sketch.

These considerations lead one to *shape-code only the outline shape as it is drawn on the paper* in Figures 2 through 3. *No mental "rotation" of the drawing should be performed either by the witness or the field investigator!*

2. The correct code for this UFO drawing is given below. Note how the Middle detail refers to the three globes and dark circle and not to the bottom convex line.

Correct Code: //V1-CV;3.06//TD2(1),A1(11)-(SL);MA7(1)-(NO);>D3(3),P13(1)-(B)//8;X25

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## UFO ACTIVITY: COSMIC CONSCIOUSNESS CONDITIONING?\*

R. LEO SPRINKLE

*Received July 31, 1976*

*The following paper is reprinted here after its previous publication in the Miniature Issue of UFO PHENOMENA (see pp. 10-16).*

*This firstly in order to express our most sincere thanks to Dr. Sprinkle for his invaluable aid when the journal you are reading now was a mere dream only. In addition we think interesting to acquaint our growing audience with this article which offers good hints for discussion.*

This paper describes a possible approach to the study of UFO reports: a tentative set of hypotheses which may explain the "physical," "biological," "psycho-social," and "spiritual" implications of UFO phenomena. UFO reports are considered in light of the hypothesis that the UFO experience tends to increase the level of cosmic consciousness of the UFO witness. Also, the emerging pattern of UFO reports is compared with the views of persons who claim to have obtained prophetic visions of events which are to occur during the next twenty-five years.

\*Adapted from a paper, "Hypnotic and Psychic Aspects of UFO Research," which was presented at the Center for UFO Studies Conference; Chicago, Illinois; May 1, 1976.

## Introduction

The purpose of this paper is two fold: to engage in speculation and exhortation. The writer recognizes that speculation and exhortation are behaviors which are not to be valued as highly as the behaviors of investigation and verification. However, the UFO phenomenon continues to offer a perplexing array of problems; perhaps, some speculation and exhortation may assist UFO investigators to develop a set of hypotheses which can be used in analyzing UFO reports.

## Hypotheses About the UFO Experience

There are nine general hypotheses about UFO reports which appeal to the writer. These hypotheses are as follows:

1. The experience hypothesis: an UFO report is a description of a real experience of the UFO witness (Hynek, 1972).
2. The truth hypothesis: the UFO witness is telling the truth (McCampbell, 1973).
3. The reflective hypothesis: the UFO experience reflects the attitudes and characteristics of the UFO witness (Keel, 1969).
4. The display hypothesis: the UFO sighting is a display to the UFO witness (Salisbury, 1974).
5. The programming hypothesis: the UFO phenomenon is programmed to be visible or to be experienced (Michel, 1974).
6. The inconclusive message hypothesis: each UFO experience contains an element of doubt or an inconclusive message (Moyer, 1975).

7. The aura hypothesis: the aura, or bioenergetic field, of the UFO witness is somewhat different from the auras of other persons (Edwards, 1976).

8. The psychic forces hypothesis: UFO experiences are manifestations of psychic forces from the collective unconsciousness of humankind (Clark and Coleman, 1974).

9. The control system hypothesis: UFO activity is a control system for conditioning human beliefs (Vallee, 1975).

The hypothesis of "control system" is appealing to this' writer because it may be viewed as incorporating many of the other hypotheses. In addition, the hypothesis is not limited to one "level" of experience: the hypothesis can refer to UFO experiences which are perceived as "physical," "biological," "psycho-social," and/or "spiritual" events.

#### Cosmic Consciousness Conditioning

The writer wishes to offer a hypothesis: "cosmic consciousness conditioning" (CCC). The CCC hypothesis suggests that the UFO experience may result in an increase in the level of "cosmic consciousness" of the UFO witness.

Bucke (1901), a Canadian psychiatrist, studied the lives of approximately 50 men and women who were seen as extraordinary in their bodily, mental, and spiritual attributes. Bucke (1901, pp. 72-75) analyzed each of the experiences of cosmic consciousness and concluded that there were several common features, including a sense of being "immersed in a flame, or a rose-colored cloud;" "joy;" "intellectual illumination," etc. The descriptions are similar to the statements which were chosen by 30%-40% of persons in a poll of USA adults

(Greeley and McReady, 1975). Perhaps the religious experience, or mystical illumination, is becoming more common--or perhaps more persons are willing to admit their mystical experiences.

According to Bucke (1901, p. 76), these experiences of cosmic consciousness cause the percipient to develop certain attitudes and attributes:

- a. He knows without learning: (1) that the universe is not a dead machine but a living presence; (2) that in its essence and tendency it is infinitely good; (3) that individual existence is continuous beyond what is called death. At the same time:
- b. He takes on enormously greater capacity both for learning and initiating.

The basic question which arises from consideration of the CCC hypothesis is this: Can UFO activity be explained as an educational system, or a control system for conditioning human beliefs toward a higher level of cosmic consciousness or universal awareness?

One advantage of the hypothesis is that the UFO investigator does not have to assume who "they" are: the intelligences behind the UFO phenomena. Thus, investigation of UFO reports can proceed without undue concern about the source of the UFO activity: Extraterrestrial intelligence (ETI)? Etherian or other dimensional intelligence? Poltergeists or ghostly beings? Subconscious forces from the collective unconsciousness? Space travelers from the "past" or "future"? Or some combinations of these sources?

The disadvantage of the CCC hypothesis is that the UFO investigator may be unable to document any connection between the specific UFO experience and the general process of "cosmic consciousness conditioning." If an UFO witness shows a greater capacity for learning, and if an UFO witness shows a greater interest in scientific and spiritual knowledge, can the UFO investigator assume

that these changes are due to the effects of the UFO experience? The UFO investigator faces the same difficulties as any researcher who contemplates "outcome" effects: the difficulty of demonstrating that the treatment conditions are the basis for behavioral changes. In addition, the UFO investigator faces other difficulties: his or her fears and doubts, as well as the fears and doubts of the UFO witness, especially those of the witness who claims to have experienced an UFO abduction (Sprinkle, 1977).

Results of UFO research depend upon the willingness of UFO witnesses to participate in extensive investigation, including the disclosure of intimate information about themselves; also, results of UFO research may depend upon the willingness of UFO investigators to approach UFO witnesses as persons who are experiencing great stress--rather than approaching UFO witnesses as inferior instruments for collecting, analyzing, and disseminating UFO data.

With greater acceptance of the "reality" of UFO experiences, perhaps more UFO observers will come forward with their reports; then, we may be able to learn more about these cases of apparent abduction and examination. Will we learn that the abductions and examinations are "staged"? Will we learn that these cases involve apparent sexual experimentation? Will we learn that these experiences are programmed in order to control or influence our beliefs about ourselves and the world around us? Will we learn that we are increasing our level of cosmic consciousness or universal awareness?

#### The Question of Prophecy

The writer wishes to offer one more speculation and exhortation: let us consider the literature on prophecy as a possible aid in the investigation of UFO phenomena.

There are several disadvantages of the speculation: the theoretical difficulties of explaining precognition; the psychological difficulties of interpreting any vision or impression of "future" events; the social difficulties of discussing the topic with fellow investigators; and the embarrassments which occur when specific prophecies fail! (See Festinger, Riecken, and Schachter, 1964.)

However, consideration of the possible role of prophecy can lead to some interesting questions: What if UFO phenomena are the "audio-visual aids" of an educational system? What if UFO experiences are lessons to be learned about future events? What if UFO experiences contain messages and prophetic visions of the next twenty-five years of history?

There is a growing body of literature which offers a common theme: the next 25 years are crucial for the development of humankind; a series of cataclysms (earthquakes? tidal waves? nuclear explosions?) will cause many deaths and much suffering; those persons with greater cosmic consciousness, or spiritual development, will "survive"--spiritually, if not physiologically.

As UFO investigators, we need not take a position on the accuracy of these claims; however, we can take the position that these statements may be useful as guidelines for evaluating the patterns of UFO experiences.

For an interpretation of UFO activity and religious or spiritual changes, the reader is referred to Downing (1968), Moyer (1970), and Flindt and Binder (1974). Puharich (1974) has presented his claims about the UFO experiences of Uri Geller. Vaughan (1973) has an excellent discussion on patterns of prophecy. Standford (1973) has provided a psychic interpretation of the Fatima Prophecy. Steiger (1973) and Sprinkle (1976) have considered the claims of persons who describe "mental communication" with beings of higher intelligence. Webre and

Liss (1974) compare the current knowledge of earthquakes, and other natural forces, with prophetic visions of Edgar Cayce. The Urantia Book purports to be the history of the Earth as presented by various spiritual messengers from higher realms of Universal Knowledge; the writer has no standard by which to evaluate the book--except for his feelings of awe.

#### Summary and Conclusions

The writer has offered speculations and exhortations on the possible advantages of the hypothesis that UFO activity increases cosmic consciousness; also, the writer has suggested that prophetic visions, within the pattern of UFO experiences, can be considered as a special form of cosmic consciousness conditioning.

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# **EPISTEMOLOGY of the RESEARCH**

## ARE UFOs POISSON-DISTRIBUTED?

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### Abstract

This paper introduces a new concept in the study of UFO waves. Little has been done with the abundant wave data of the past. The POISSON distribution, a statistical distribution for random and rare occurrences, such as accidents or earthquakes, is explained and applied to the author's data on the 1954 fall wave at Austria. It is shown that the 94 cases reported in the 12 week-period are not related in a causal sense and therefore no "outside driving force", but a heavy publicistic amplification effect on the reporting of new cases is likely to have produced the "wave" structure. As the POISSON concept may shake several other "wave" structures at closer examination, general effects of this Austrian result and possible further tests on the validity of the concept are discussed.

### Introduction

UFO waves are such outstanding features of the global phenomenon and concentrations of available information that one wonders why so little has been done with the available data. A study of VALLEE (1) has yielded some results on time scale, daily maximum etc. of the reported phenomena, but the question "Are observations in wave periods interconnected statistically?" has not been posed in a satisfying way. The dead-end street of Orthoteny (2), (3), which was an interesting approach basically, has shown that nothing more is to be expected from a certain methodological approach than has been introduced at

the first stage. BAVIC may be statistically significant and probably is (4), but what does it really mean? Several unconnected reports out of several millions since 1947 lie on a straight line. So why all the trouble? The BAVIC structure has never appeared again in its significant form.

#### Material and Method

To develop a statistical method with possibilities to gain deeper insight in the wave phenomenon the author has searched the mathematical literature on rare, random processes (such as earthquakes or severe accidents) and found a well-known distribution as an analytical tool for the purpose (5).

It is called POISSON DISTRIBUTION and was introduced 1837 by S.D.POISSON for BERNOULLI trials, i.e. experiments with only two possible resulting events (accident or no accident, observation or no observation etc.) as an approximation to the Binomial distribution:

$$f(x) = \frac{\mu^x}{x!} \exp(-\mu) \quad \text{for } x = 0, 1, \dots$$

The Poisson distribution will be familiar to all colleagues who work with discrete distributions, so we shall omit the theoretical background here, but present its practical application immediately.

"Poisson trials" are rare and random, for instance misprints per page of a given book (not a newspaper), number of raisins per square inch of a cake, number of fatal accidents per given mile of a highway in a one-year interval. Two events as results of a Bernoulli-trial are per definitionem not related, e.g. the probability of the next accident per given mile of highway is not dependent whatsoever on the number of accidents which have already happened there in the past, but remains a constant. Every Roulette player deals with Bernoulli trials, although few will realize this. Back to the highway example, if there is a statistically significant tendency of accidents to occur between

milestone  $x$  and  $y$ , the distribution of events per mile along the highway will deviate from a Poisson distribution in a statistically significant way, too. KREYSZIG gives a bizarre example in his book (6) listing up the number of soldiers killed per year ( $x$ ) by kicking horses in Prussia's cavalry regiments:

$x$	observed	POISSON, rounded
0	109	109
1	65	66
2	22	20
3	3	4
4	1	1
$\geq 5$	0	0

The statistics covers 20 years of the 19th Century and 10 regiments. A statistical test known as CHI-SQUARE will show that the observed discrete numbers of victims can be correctly described by a Poisson distribution with  $\mu = 0,61$  (mean value). Thus, we may infer that no two fatal horse accidents were related in a causal sense and that they occurred purely random.

Now to the application of the Poisson distribution on our wave data. It is generally assumed among nowadays ufologists that a "wave" is a manifestation of appearances that are not individually independent but build up a denser activity pattern. Some even venture so far to call it an "invasion". All this is no definition as "activity" has never been defined in a scientific way (for some authors every isolated report is "activity on the rise"). Before we can do an analysis with an historical part of activity, a few thoughts on the interpretation problem seem necessary.

The interpretation is quite clear with kicking horses or highway accidents. The CHI-SQUARE test result shows whether our null hypothesis must be refuted, i.e. whether the regiment was never made up by especially clumsy soldiers or

whether there was never a "mile of death" somewhere along the highway - or not. But how with UFO observations? From our work at Austria we know that witnesses of different UFO phenomena in the same period of time are seldom related in a causal way. We can assume that causal relation of UFO observers, if it is found by statistics, is mostly due to a real frequency shift in the phenomenon called "activity", whatever its physical cause may be. In case the, say, daily number of reports during a wave is Poisson-distributed we may conclude that the main characteristic of that wave is the broader documentation of usual, random observations stimulated by the press and social interactions and that the word FLAP is to be preferred regardless of the area covered by "activity". The individual probability of seeing UFOs may not be different at all during flaps, but there are more alert fellows to look, which becomes apparent in studies of "local flaps" based on few interested witnesses (7).

However, if the daily reports are no Bernoulli trials and not independent, one is right to postulate an "outside drive" for the rising and falling of the "activity" and is allowed to call this process a WAVE, as in physics. Although it is not possible to discriminate between "drives" and tell whether they are natural, psychological or extraterrestrial in origin, a significant deviation from Poisson would encourage special studies of the wave material on record in order to find out what the "drive" could be.

To sum up the above ideas, the Poisson distribution is a help to distinguish "outside influenced / driven" processes from mere press-stimulated peaks and indicates, when applied to the material on routine basis, the "real pulse of the phenomenon". In Applied Physics the Poisson distribution is used e.g. for the discrimination of sporadic and stream meteors and of earthquakes from after-quakes (5).

### Result

To test the proposed method in an easy way without computer time, the author

did an evaluation of his 1954 data (8) which constitute Austria's most active period, the only "Austrian wave" ever recorded. 94 unidentified reports from August 31 to November 20, 1954 (82 days, 12 weeks) were sorted by their daily frequency (x = cases per day) with the following result:

x	observed = h	f(x)	POISSON = h <sub>0</sub> μ = 1	h - h <sub>0</sub>	(h - h <sub>0</sub> ) <sup>2</sup>
0	39	0,3679	30	9	81
1	18	0,3679	30	-12	144
2	16	0,1839	15	1	1
3	4	0,0613	5	-1	1
≥ 4	6	0,0190	1	5	25
Σ	83		81		252

For the best-fit Poisson distribution computed from the empirical data too low values resulted for x = 0, 2 and ≥ 4 whereas for x = 1 and 3 the Poisson distribution overestimates the observed frequency of cases per day.

A Chi-Square test was done:

$$\chi^2 = \frac{(h - h_0)^2}{h_0} = \frac{252}{81} = 3.1$$

The significance level for β = 0,05 and n = 5 - 1 - 1 = 3 equals 7,82. Therefore we cannot refute the null hypothesis that the differences between theoretical Poisson distribution and our wave data distribution is purely

random and below the significance level for  $\beta = 5\%$  (error probability).

An additional evaluation done for the peak interval of the "Austrian wave" from September 16 to October 5, 1954 (22 cases) reached the same conclusion. The wave data distribution showed no significant deviation from a Poisson distribution with  $\mu = 1$  and  $x = 0 \dots 7$ ,  $\chi^2$  for the data was 1,3625, the significance level 3,84.

### Discussion

What is to be learned from this result?

- a) Problem—adequate statistical descriptions and testing of hypotheses for "wave" data on record are likely to give interesting results.
- b) Austria's "wave" period of 1954 was shown to have a random sub-structure with no causal dependency of one report on the other, suggesting a flap.
- c) All data on "waves" on record should be checked in the same way to find out whether the Austrian result is typical for other, larger structures or not. If it is, MICHAEL's picture of a "wave" as an "orchestra piece" (2) has lost its value. There is no orchestra piece with random playing instruments and without inter-relation of the players, if we skip certain specialized free-jazzers for the moment.
- d) Similar to psychological results that many persons do not form a team, but a crowd at first contact, it seems that many reports do not automatically form a "wave", but a flap and have to be treated individually. Ufology as a discipline must overcome the careless handling of the undefined "activity" concept.
- e) For local "activity structures" the Poisson distribution offers a good possibility to test the old idea of "intelligence" behind the sighting pattern. "Intelligent activity" is highly likely to deviate from a Poisson distribution. If the reported phenomenon falls in the same frame as accidents or earthquakes, we may forget about "intelligence". Statistics will show.

- f) To examine the validity of my Poisson concept, a closer look at the UFO reporting process by sociologists or social psychiatrists would be useful. As up to 90% of all sightings seem to remain unreported (HYNEK), even in wave periods, one has to make sure whether the Poisson distribution of reported cases may be produced in the selective reporting process or not.

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## A STATISTICAL APPROACH TO THE UFO BASIC DATA FOR THE INSTITUTION OF A "RECOGNITION FILTER"

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### ABSTRACT

*This paper aims to show a new statistical method to process data interesting UFO research. Mainly it is shown how one can gather data referring to the same set of phenomena or similar type objects, out of the spread-out group of UFO reports. All this will be obtained through the analysis of statistical relations shown by the different sets of data under quantitative aspects through the analysis of correlation coefficients among one sight and the other ones. After a theoretical explanation we will present an easy example which may show in practice to implement such a research. Anyway this example refers to a real situation, even if the set of data is not a very large one, but which is a typical and frequent case. The most important conclusion drawn which appears from this numerical set, the filter, in fact allows to recognize the phenomenon besides imprecision and randomness of the gathered data.*

KEY-WORDS: Active Research; Anomalous Segments; Basic  
Data Matrix; Complete Graph; Correlation  
Coefficient; Correlation Matrix; Filter;  
Group- Phenomenon; Identical Object; Objects  
of Analogous Type; Observation Parameters;  
Principal Diagonal; Recognition Filter;  
Threshold Correlation; UFO Data.

#### INTRODUCTION

The researcher who wishes to turn his attention and direct his researches towards the UFO phenomenon, soon finds himself faced with a drastic choice concerning the possible approach to the problem. In fact, it is possible to analyse each single case endeavouring to extract all the informations contained therein, either by directly approaching the witnesses and verifying their statements and checking their reliability, giving special conside=

ration to their personality and psychology revealed during their reporting, both by studying all the physical aspects manifested during the event, aiming to check if a conventional interpretation exists which accounts for the apparition and the deportment of the phenomenon being studied.

This is a very convenient way in which to approach the problem in as much as it enables the data to be collected from a great mass of dubious or unfounded signals and provides, with a reasonable margin of reliance, material for ulterior and more profound studies. The limit of such approach consists in its partiality and in the impossibility of revealing deportment and constancy which can only be evidenced by means of a more global and general analysis of the phenomenon.

And this is a second possible approach to the UFO phenomenon.

The researcher who decides to investigate in this direction finds that it must face a situation which is

not particularly convenient. In fact, it is rarely possible to have at disposition witnesses which are reasonably controlled and thus to be considered acceptable, thanks to the type of researches previously mentioned.

Very often the data come from many different sources and the accuracy and quality of the information extends over the widest possible range following the variety of all the possible witnesses. Furthermore, the data themselves do not present any particular homogeneity as regards the different aspects of the phenomenon observed.

In general, it is possible to have a collection of data gathered in an unhomogeneous and disorderly manner, thus not permitting their immediate and significant utilization.

The methods of elaborating this collection of data, in order to extract as much of the information as possible contained therein and arrive at an interpretation of the characteristics of the phenomenon, may be furnished by an analysis of statistical nature.

We will not go into great detail by listing all the advantages and possibilities offered by an approach of a statistical nature, but will try only to emphasize how this can enable us to proceed profitably in our particular case.

The principal characteristics of the phenomenon obtainable via statistics are essentially determined following two directions:

- a) analysing the great mass of data and searching for some regularities which permit a characterization of the *UFO phenomenon* : this is one of the primary objectives of our research, especially because we think that, once correctly prepared, its application could furnish a very powerful instrument in this field of research.
- β) Utilizing data which, for other directions, have already been significantly recognized as *UFO data*, subgroups of events can be recognized, which establish the *group-phenomenon* particular, i.e. phenomena which

belong to the same type.

That which indicated in Note a), even if from a purely logical point of view seems to precede the successive research, according to us, for methodological reasons, should instead be dealt with later on. It is noted, in fact, in other scientific fields, such as from examination of numerous congeries of particular cases, that it is often possible to extract adequate regularities which give an indication of the existence of a possible law.

The statistical methods which will be introduced in the treatment of Note  $\beta$ ), will form a sort of *recognition filter* which enable us to recognize different classes of phenomena, forming respectively:

- 1) an *identical object* which has been noted by several witnesses, who were in different localities, and who have various reactions to different kinds of stimulations (shape, colour, external conditions...);

2) *objects of analogous type* which present characteristics sufficiently similar to enable them to be considered as belonging to the same class (even if they refer to observations made at different times and in different places): in this way it should be possible to formulate a first, even if very rough, classification of the various types of phenomena.

Once the above has been obtained, it would even be possible to tackle two further lines of analysis:

- a) once the *identical object* (statistically speaking) has been recognized, checks can be made on how the relative observations are distributed as regards the variables which have permitted the characterization;
- b) if instead the classification is *types of objects*, it is possible to turn to the study and the research of the general characteristics of what we may consider as the *UFO phenomenon*, so having some indications for the solution of Note  $\alpha$ ) mentioned previous=

ly.

For both types of analyses which have just been described, we will try, once an observation family has been formed (according to a) or b)), to determine, for each component of said families, the significance of such appurtenance.

#### MATERIALS AND METHODS

We have already explained why, at the beginning of the analysis of a series of various data, the institution of what we have called *recognition filter* is necessary: this is mainly required for the discrimination of the *group-phenomenon* inside the great mass of data.

We now propose analyzing the procedures which lead to this filter, as well as to evaluate the significance of the various methods used.

The first thing to do is to see in which way it is possible to prepare the data available for elaboration.

tion, "i.e. in which way we can the various *items* (characteristics) of each single witness be organized; it would also be appropriate to define a terminology and a symbology to be uniformly maintained during our work.

By *items* of a witness, we mean those characteristics of the observation (which date, time of the vision, apparent height, form, etc) which define the individual observation: whether they are in numerosity  $m$ , once they have been codified, they will be called *observation parameters* and the  $n$ -th observation  $\underline{X}_{.i}$  will be made up of a column vector in  $m$  components (each of which is a parameter); having at disposition  $n$  observations, we can say *basic data matrix* the matrix  $[X_{m,n}]$  and the procedure for the research of the *recognition filter* will be applied to said matrix (6).

Now, considering that the problem with which we are faced is mainly that of effecting a clustering of the various observation vectors, it is necessary to clarify which properties should be used for the assimilation of

the vectors themselves, or alternatively, which reports should be used in order to arrive at the various groupings.

The basic hypothesis is that the witness, and hence the observation vectors, do not only differ because they refer to different phenomena (objects), but also for the diversity of the observation situation (locality, time, environment conditions, etc.). Another reason for the diversification will be caused by the inaccuracy, to which each witness is subjected, which results from different sensibilities, impressionability, a word, from the various psychological components of the witness himself. Nevertheless, it is legitimate to consider that there are more differences in those observations (those vector  $\underline{X}_i$ ) relating to objects or phenomena which are really different from each other, rather than those relating to objects which have been observed differently but which fundamentally form part of the same *group-phenomenon* .

Someone could, and quite rightly so, ask us at this point: "Now then, what exactly do you mean by *group-phenomenon* ?"

Even though the question would be legitimate, an answer which has all the characteristics of a precise definition, does not seem to us, at least for now, very useful. On the contrary, we think it would have the opposite effect: it would require a long discussion both on the statistical approach of the type of data available as well as the various types of possible relations. This would make the work more laborious and even render the concepts through which they develop, less clear. It is for these reasons that we have preferred to follow an operative principle and put off giving a precise definition until this automatically arrives from the conclusions that we will draw.

On the other hand, it still seems possible to us to dispel the most serious doubts thereto by means of the following observation: in the *group phenomenon* will

be collected all those observations which are connected one to another by facts which are principally of an as-similability character in their variability (statistics) and which result in being difficulty recognizable in a direct way in the total mass of data.

A statistical instrument which is very useful in the recognition of those facts which bind the different  $\underline{X}_{.1}$ , is certainly made up of *correlation coefficients* (6,7,8): given a couple of vectors ( $\underline{X}_{.1}, \underline{X}_{.1}$ ) one could say *correlation coefficient*  $r_{11}$  the value being defined as follows:

$$r_{11} = \frac{\sum_{j=1}^m (X_{j1} - \bar{X}_{.1}) (X_{j1} - \bar{X}_{.1})}{\sqrt{\sum_{j=1}^m (X_{j1} - \bar{X}_{.1})^2 \times \sum_{j=1}^m (X_{j1} - \bar{X}_{.1})^2}}$$

$$\begin{aligned}
 & \frac{\sum_{j=1}^m (X_{j1} X_{j1}) - \frac{\sum_{j=1}^m X_{j1} \sum_{j=1}^m X_{j1}}{m}}{m} \\
 = & \sqrt{\left( \sum_{j=1}^m X_{j1}^2 - \frac{\left( \sum_{j=1}^m X_{j1} \right)^2}{m} \right) \left( \sum_{j=1}^m X_{j1}^2 - \frac{\left( \sum_{j=1}^m X_{j1} \right)^2}{m} \right)}
 \end{aligned}$$

where the form to the last member is that normally used for the true and real calculation together with that adopted by us in our work. It can be shown:

$$-1 \leq r_{11} \leq 1$$

The utility of this quantity consists in the fact that it permits the connection (or disconnection) in a more or less significant manner two variables (our  $\underline{X}_{.1}$   $\underline{X}_{.1}$ ) recognizing a linear interdependence. We will not explain in detail here how this comes about, referring this to the classical literature (3,6,7,8); it

would, however, seem helpful to us to say two words on its interpretation; in particular it seems important to us to remember that the existence of a correlation coefficient, even close to 1, of two variables, does not create a sufficient condition for their interdependence, but only necessary. That it to say: if two variables show a well determined linear dependence one from the other, their correlation coefficient will result high, but that does not mean that if the correlation coefficient will result high, there is necessarily a casual dependence one from the other. In this connection, we would like to mention a curious case referred to by Kendall and which is now famous in statistical literature (7). The correlation coefficient calculated between the increase in the number of radio subscribers in the period 1924-37 and the increase in the number of mentally handicapped in the same period, is 0.998, which indicate a close correlation between the two facts. It is obvious, of course, that such a result is

pure coincidence.

However, if there is certainty *a priori* that between the variables that are studied, there could exist a precise connexion, it is right to expect that the correlation coefficient gives reasonably precise indications as to which are the associable variables and which are not, according to those connexions. This is precisely our case: the basic hypothesis that we premised and which ascertained that those reliable observations which formed part of the same *group-phenomenon*, more than those forming part of different groups, aimed at overcoming this obstacle. Do not let us waste any more time in the valuation of that hypothesis because its reliability seems to us natural and evident; we would only like to add that a similar procedure is often adopted in the analysis of statistical character where certain procedures have a sole sense if referred to precise initial hypothesis, just as in our particular case.

Now let us see how we propose to continue, taking note that this description will be followed by a numerical example which should be continually compared for a more precise understanding of the concept exposed. First of all, we will calculate the correlation coefficients between the various pairs of observations, i.e. between all the matrix columns  $[X_{m,n}]$  obtaining a collection of correlation coefficients  $r_{i,j}$  that may be ordered in a matrix  $[R_{n,n}]$  so called *correlation matrix*. As the correlation, if considered as a relation, enjoys reflective property (each element is closely correlated with itself:  $r_{i,i} = 1$ ) the principal diagonal will consist of 1; because, furthermore, it enjoys symmetrical property (if  $\underline{X}_i$  is correlated with  $\underline{X}_j$ , there is the same correlation between  $\underline{X}_j$  and  $\underline{X}_i$ , i.e. numerically there is the same value  $r_{ij}$ ) the matrix  $[R_{n,n}]$  is symmetrical: for this reason in Table B, there is only the upper half.

Once the correlation matrix is ready, an  $r_0$  value will be established, and this will be called the *thre=*

*should correlation* . The choice of said value is not all arbitrary, but the discussion on how to obtain the optimal value, being more exactly discriminative, is still excluded from the scope of this work and, thus, we only mention it. This question will be returned to later on when we have seen how the group construction is built. It is obvious, however, that, for example, a value  $r_0 = 0.85$  as that chosen in the numerical case which will follow, will supply correlation indications, or not, for a pair  $\underline{X}_i, \underline{X}_j$  sufficiently precise for the scopes which we had established.

As we are actually more interested in the discrimination and clustering method, we will take as known the value  $r_0$  and continue from there without further discussions. On the matrix  $[R_{n,n}]$  will be localized, all those elements which manifest a correlation coefficient  $\geq r_0$ : all the values  $r_{i,j} \geq r_0$  will indicate the appartenance of the pair  $(\underline{X}_i, \underline{X}_j)$  to the same group. At this point, a new problem arises if the relation (correlation) on

which we are investigating, also enjoys transitive property:  $\forall i, j, l \{ (\underline{X}_{.i} \sim \underline{X}_{.j}) \wedge (\underline{X}_{.j} \sim \underline{X}_{.l}) \} \Rightarrow (\underline{X}_{.i} \sim \underline{X}_{.l})$   
the symbol  $\sim$  reads: *correlated*.

If the reply was affirmative, our relation would be an equivalence relation (4) enjoying reflective, symmetrical and transitive properties and would enjoy various properties relating thereto, amongst which, in particular, that which ensures the possibility of constructing from the initial data (all the observations  $\underline{X}_{.i}$ ) a certain number of equivalence classes ( the *group-phenomenon* ) detached amongst themselves. In other words, this would mean that the matrix  $[R_{n,n}]$  is presented in a particular way, giving rise to a clustering, let us say, automatic. We now explain what we mean with an illustration: should the relation be of equivalence, a situation such as that in Figure 1 would arise, in which every observation is correlated with all the others of its group and only with those.

$R_{n,n}$	$X_{.1}$	$X_{.2}$	$X_{.3}$	$X_{.4}$	$X_{.5}$	$X_{.6}$	$X_{.7}$	$X_{.8}$	$X_{.9}$	$X_{.10}$	...	$X_{.n}$
$X_{.1}$	1	*	*	*	•	•	•	•	•	•	...	•
$X_{.2}$		1	*	*	•	•	•	•	•	•	...	•
$X_{.3}$			1	*	•	•	•	•	•	•	...	•
$X_{.4}$				1	•	•	•	•	•	•	...	•
$X_{.5}$					1	*	•	*	•	•	...	•
$X_{.6}$						1	•	*	•	•	...	•
$X_{.7}$							1	•	•	•	...	•
$X_{.8}$								1	•	•	...	•
$X_{.9}$									1	*	...	...
$X_{.10}$										1	...	...
...											...	...
$X_{.n}$												1

Figure 1

Example of correlation matrix

The asterisks indicate values of  $r_{i,j} \geq r_0$  and the groups are distinguished more or less straight away:

A(X.<sub>1</sub>,X.<sub>2</sub>,X.<sub>3</sub>,X.<sub>4</sub>), B(X.<sub>5</sub>,X.<sub>6</sub>,X.<sub>8</sub>), C(X.<sub>7</sub>),  
 D(X.<sub>9</sub>,X.<sub>10</sub>.....), ..... .

A straightforward way in which to visualize the situation is furnished by graphs (<sup>1,5</sup>); if every apex of the graph is made up of an X.<sub>i</sub> and each segment symbolizes the relation, we have the Figure 2:

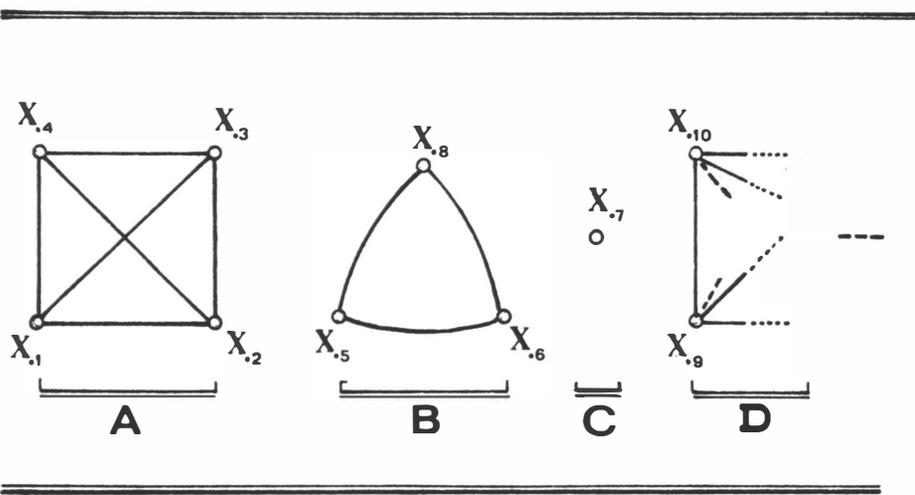


Figure 2  
 Complete graphs relating case  $r_{i1} \geq r_0$

In other words, it means extracting from  $[R_{n,n}]$  the variety of all the complete graphs: each one of these will form a group.

On the basic matrices of data of numerosity  $n$  which are not too high, this would be quite easy and immediate and, as we will see, could be done, so to say, with the *naked eye*. This is not so for data in which the numerosity exceeds our visual capacity: let us imagine a basic matrix with dimensions  $m \times 500$ , the correlation matrix would have dimensions of  $500 \times 500$  and would then necessitate an automatic analysis, to be entrusted to a computer, of the various correlation coefficients. Our research will be carried out along this line (on a study of numerous data covering quite a long period of time), and for this reason, we are postponing it to our next work. For now, we note that the clustering effected in this way certainly results in a more precise univocal, rigorous and suitable *recognition* of the groups.

Let us now go back one step: is it really right to

consider that the observations correlate transitively?

Leaving aside, a pure theoretical treatment of the problem, we can certainly confirm, from various tests effected, that a said possibility depends, in the major part of cases, on the choice of  $r_0$ . It then seems natural to confirm that the threshold correlation values to be established, are no other than those which determine a discrimination of the groups on the basis of a transitive relation.

This concept is quite delicate and any objections which, at least at first sight, could be raised, are numberless; so let us try to explain exactly what we mean.

Let us imagine that the correlation coefficients are arranged in such a way that with a choice of  $r_0 = \xi_1$  one could construct graphs of the type in Figure 2, whilst with a choice of  $r_0 = \xi_2 < \xi_1$  ( $0 < \xi_2 < \xi_1$ ), one could con=

struct the graphs in Figure 3:

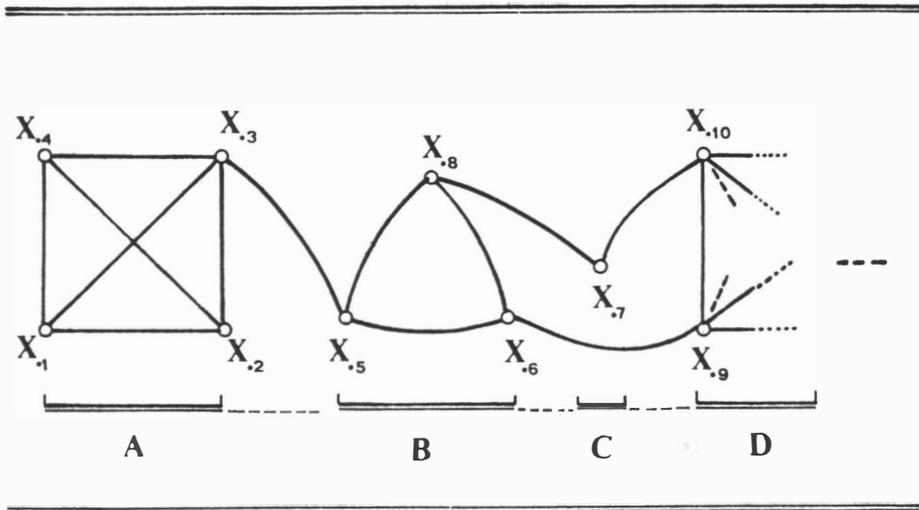


Figure 3

Graphs relating case  $r_{i1} \geq r_\alpha$  ( $r_\alpha < r_0$ )

Granting, then, that a choice of  $r_0 = \xi_3 < \xi_2 < \xi_1$

$(0 < \xi_3 < \xi_2 < \xi_1)$  would lead to the following type of situation (Figure 4):

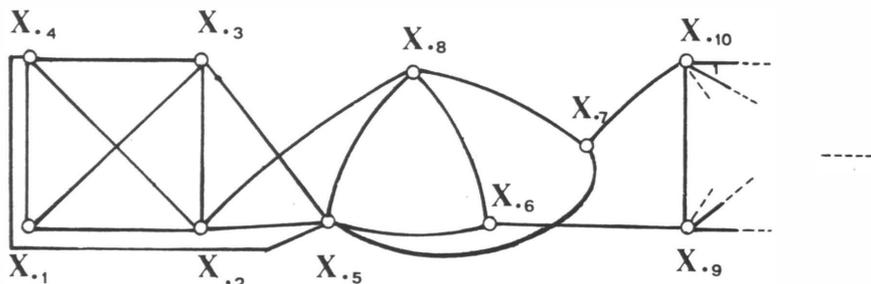


Figure 4

Graphs relating case  $r_{11} \geq r_v$  ( $r_v < r_\alpha < r_0$ )

It is obvious that the groups which interest us are those illustrated in Figure 2; but the question could arise that if by increasing indefinitely the value of  $r_0$ , the groups in Figure 2 would not then be further subdivided. Well, this does not usually happen!

We would repeat that this is not a suitable moment for a theoretical treatment of the problem, and so, at least for the time being, we will satisfy ourselves with these results from a direct observation. Nonetheless, it is necessary to emphasize the following observation: the presence of those segments, which in the different graphs are added to the reduction of  $r_0$ , and which from now we will call *anomalous segments*, could easily be explained as an *error* in a statistical sense, in the sense that their existence could be due to those inaccuracies already mentioned: these are shown in the increase of the statistical imprecisions to which the determination of the correlation is referred.

It is therefore obvious that the best determination of the groups will be that defined by the  $r_0$  which presents a situation similar to that in Figure 2.

On the other hand, if it is not possible to have a similar discrimination of the groups (i.e. if no choice of  $r_0$  leads to separate groups), there is, nevertheless,

verification, as we said, that amongst all the possible choices there exists one which guarantees a minimum number of *anomalous segments* . There is always a situation in which there are few (more often single) anomalous segments, or alternatively observations which could belong to more than one group and which are only connected with certain elements of other groups. In the numerical example which follows, having fixed  $r_0 = 0.85$  proved sufficient to ensure a discrimination in separate groups.

## RESULTS

In order to verify concretely the subject dealt with, we applied an analysis along the lines of the above-mentioned principles to a series of observations extracted from the casuistry relating to the year 1954, which, appropriately codified according to the following 5 components: date, form, colour, type of observation,

height, form part of the basic matrix of the data  $[X_{5,8}]$   
in Table A:

$X_{5,8}$	$\underline{X}\cdot 1$	$\underline{X}\cdot 2$	$\underline{X}\cdot 3$	$\underline{X}\cdot 4$	$\underline{X}\cdot 5$	$\underline{X}\cdot 6$	$\underline{X}\cdot 7$	$\underline{X}\cdot 8$
Date	1.0	0.8	2.1	1.5	2.1	2.2	1.5	1.1
Form	1.0	1.0	3.0	2.0	3.0	3.0	3.0	1.0
Colour	2.0	2.0	2.9	1.2	3.1	3.2	1.1	2.0
Type of Ob.	3.0	2.2	0.9	3.0	1.1	2.0	3.0	2.0
Height	1.1	1.1	1.1	2.1	1.0	1.0	2.0	0.9

Table A

Example of basic data matrix

The limited numerosity does not remove the general-  
ity from the analysis and permits a direct verification,

precisely with the *naked eye*, of the above-mentioned principles.

The resulting correlation matrix is the following in Table B:

$r_{ij}$	X.1	X.2	X.3	X.4	X.5	X.6	X.7	X.8
X.1	1	.95	-.40	.55	-.28	.08	.21	.90
X.2		1	-.17	.33	-.05	.26	.04	.96
X.3			1	-.73	.99	.87	-.34	-.05
X.4				1	-.69	-.46	.85	.14
X.5					1	.93	-.34	.09
X.6						1	-.20	.39
X.7							1	-.15
X.8								1

Table B

Example of correlation matrix

From this it is quite easy to extract the observations in such a way as to construct the graph in Figure 5, in which all the observations which present a correlation coefficient  $r_0 \geq 0.85$ , are connected.

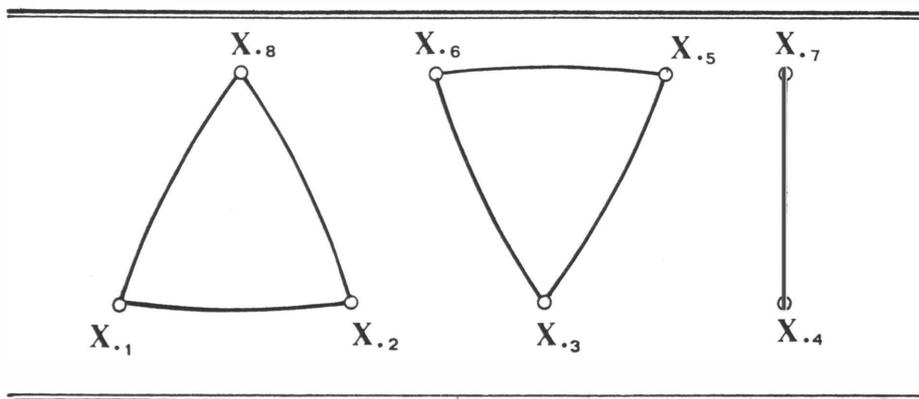


Figure 5

Complete graphs relating case  $r_{11} \geq 0.85$

We repeat that the choice of said threshold correlation is not arbitrary: one only considers what would happen if  $r_0 \geq 0.00$  had been chosen....

All things considered, someone could maintain that it is the same evidence of facts which produces the choice of  $r_0$ : we would have to say that they are quite right!

What is certain is that the three groups which we have constructed in this way, are different one from the other in quite a definite manner and that the differences between them are then controllable even from a direct analysis, based on simple intuitive considerations. There remains the fact that such immediate considerations are altogether impossible for a mass of data of a high numerosity, and thus statistically significant.

#### DISCUSSION

We like to ask ourselves about consequences and implications following a statistical approach to the problem. An aspect which looks to us rather meaningful, con=

sists mostly in researching a further evidence of the reality of the phenomenon. Such an evidence may be related to a set of statistical regularities and constancies which appear enough significant.

As a matter of fact, analysis of different sights considered as isolated facts, may also offer a certain hint of the existence of the phenomenon, although always aleatory, for not being possible to exclude blunders and hallucinations. But if we combine different inquiries with statistical analysis, we can enforce and make less questionable the existence of the *reality* behind UFO phenomenon.

We like to emphasize now the range of possibilities inherent to such an approach. Let us refer, for example, to a specific one. As far as we know informations about *UFO data* held by researchers, was originated by occasional and random events. The physical presence of an observer, which could witness of such appearances or about the time development of events, anyway not really fre-

quent, is always a casual fact.

Also sky-watch experiments never succeeded completely. In a few words UFO research has always been, as far as now, biased by a passive attitude towards the same phenomenon which it is willing to deepen.

Now we feel that it is time to grasp an active attitude and this try should be implemented as soon as possible, provided that one can dispose of adequate means. Hints pushing to follow this path are not lacking. 1975 paper by Vallée and Poher (9) points out clearly the existence of a relative large amount of *UFO events*, when E. Berger paper (2), published in this journal, shows UFO phenomenon as rare event, but mostly constant, even if this constancy is not perceived because of the alternating interest offered by the public opinion. It might seem mostly meaningful to start an *active* and possibly computerized *research* in such a way to make ourselves as most as possible undependent from the casualty of the presence of human witnesses or from the above

mentioned wave tendency of mass interest for UFO phenomenon. As a matter of fact, such an active research should imply a certain way to retrieve the event. It is our opinion that a statistical method like the one we presented, could succeed and provide a useful tool to detect *UFO data* out of the similar but false ones, and to process them in a statistical analysis, provided that this method can be tested in a deep way.

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## CALL FOR PAPERS

Authors are requested to send as soon as possible their manuscripts to be considered for publication in UFO PHENOMENA Vol. 2 No. 1 (1977). All manuscripts **must** be received not later than December 31, 1977.

A careful reading and application of the Instructions to Authors (see pp. 4 **in this issue**) is strongly recommended.

In fact it will be one of *basic* principles used in the final approval of any paper submitted for publication in the journal.

Review articles, original papers (models and hypotheses), analyses of UFO cases, book reviews, letters to the editors, contributions for debates, criticisms and suggestions, are welcomed.

**Long and detailed** manuscripts will be preferred to short and scarcely significant communications.

Please, in your submission of manuscripts to the qualified editor, specify in a clear manner what section they belong (see the list of the Sections at pp. I **in this issue** ). Thank you!

## LETTERS TO THE EDITORS

The "Letters to the Editors" section of UFO PHENOMENA provides the scientific community and UFO amateurs with a central forum for debate and comment, criticism, both favourable and otherwise, of published works (not only in UFO PHENOMENA) are which are welcomed, as are announcements and brief reports of conferences, workshops, summer schools and meetings.

Eventual fellowships in the field of UFO phenomena studies can also be announced through this channel. Other possible subjects for this section include "appeals for help", e.g. requests for information on a particular (technical) problem.

### Biology and CE III: Raising the Debate

Dear Editor:

I would like to raise a question seemingly little considered by many U.F.O.'s students.

I refer to the rather odd subject of Close Encounters of Third Kind (i.e. the CE III) according to the Hynek classification.

I have found in the literature very few remarks by the authors as concerns a possible "biological" approach to these reports.

More clearly I believe only analyses like those accomplished by the Spanish Vicente-Juan Ballester Olmos (1) or recently by Dave Webb (2) in USA are really meaningful in this direction.

In fact they focus in their studies on two important ideas:

- i) The CE III is essentially an interaction between two systems: the perception of the witness and the entity. The first is a biological one; the latter is of unspecified nature, even if *apparently* biological either in the morphology or

in the behaviour, at least in most of cases.

- ii) The study of a set of manifestations, where mostly anthropomorphic beings are present, should be organized through common biological procedures (for example: the classification according to the affinities recorded among various observed types and so on).

To the light of such thoughts I urge UFO PHENOMENA enhances open-minded confrontations between biologists and serious UFO students toward a better attack to the Michelian "festival of absurdity".

Perhaps we would be able to get more substantial information on this little known side of close proximity sightings involving entities.

Best regards

LANFRANCO FATTORINI  
Orvieto - Italy

(1) Ballester Olmos V.L. (1973) - FSR 19, No. 3, 19.

(2) Webb D. (1976). "1973: A Year of Humañoids" - Evanston: C.U.F.O.S.

*Of course, I must echo Mr. Fattorini's desire for taking an organized, biological approach to reports of encounters with UFO occupants. Certainly there is much that biological training might contribute in such cases. The taxonomy of types is not a bad example, although most taxonomists (biologists who classify organism) would be extremely uncomfortable if their classifications had to be based on witness reports rather than direct examination of specimen. The facts of biology and especially genetics certainly apply to reports dealing with occupant contacts, but we must remember that our knowledge in biology is far from complete and that many of our generalizations will be modified as more data come to light. Thus we should be wary of making statements about what is possible and what is impossible in relation to occupant reports.*

FRANK B. SALISBURY

## The Problem of Terminology

Dear Editor:

the need of a scientific journal as "U.F.O. PHENOMENA" was tremendously felt.

My best compliments for the kind of approach chosen in dealing with U.F.O. data.

I strongly believe this new publication can become a very useful tool to debate in a proper manner the U.F.O. enigma.

The importance "U.F.O. PHENOMENA" has given to the "terminology" question is a basic one deserving an especial emphasis.

In fact any true scientific discipline requires precise definitions as well as a method for a correct analysis of all

available data.

This in an actual challenge so far unsolved and much often ignored by the so-called "U.F.O. logists".

Accordingly the same word "object" so easily used speaking of U.F.O.'s should undergo a careful survey. No doubt it could represent a big task either for epistemologists or for anyone seriously concerned with the problem of a physical reality of U.F.O.'s sightings.

However, in my opinion, "U.F.O. PHENOMENA" should stimulate in its future issues a deep discussion in order to achieve some significant progress in this very intriguing subject.

Sincerely

FABRIZIO CERQUETTI  
Civitanova Marche - Italy

*I think that particular attention must be drawn to the arguments we are going to explain in this letter and therefore an early reply is kindly requested.*

*It is true that in order to undertake any discussion, it would be necessary to utilize a univocal terminology, possibly correspondent to any of the arguments which can enter the discussion. This should be an ideal situation! What happens in reality it's different.*

*Generally, a term utilized in a context presents wide variety of possible interpretations, therefore the ensemble of terms will be often understood differently, by various people in connection with their different psychological situations. It is necessary therefore, for better understanding to use the more often univocal terms.*

*Scientific languages are at present those which mostly approach the reaching of these requirements; mathematical formalism and symbolic logics are at the*

very top level.

On the other hand, even in a scientific context, it is not always possible to utilize these formalisms; it happens that also the language utilized to deal with scientific matters presents lacunae and ambiguities.

These deficiencies are usually minimized by uniforming terminology at the highest level so that, even if some terms could result not adequate to express a precise concept, the common agreement in using that term, does not give the possibility to take into consideration an alternative interpretation.

In the history of scientific theory evolution a large range of terms we could define "inappropriate" have been accepted, in order to much communication needs. One of the typical examples is the term "atom" itself, whose meaning, as known, is indivisible; this does not apply to the physical reality of the entity that we usually define with this term.

This is the case of the arguments we are dealing with; the term "object" in fact, remains inappropriate until we will have a more valid and precise knowledge of the phenomenon itself.

Using a less accurate terminology, such as "Anomalous Air Phenomenon", we can notice that it becomes inaccurate when we refer, for example, to a sighting from land or directly to a sighting where "entities" are involved.

On the other hand, we cannot stop improvements, in scientific research waiting for an adequate clarification of the terminology to be used; nevertheless, we must go on and use the terms we dispose to communicate.

Shall we think then that we must always and in any case use inappropriate terms? Not at all! Very often, the usage of an adequate and precise terminology brought to a more rapid and efficient advancement in knowledge. We have to proceed by steps; up today the UFO research has not yet completely clarified its inquiry area, and consequently we cannot by now pretend to utilize an uni-

vocal defined language: finally, the language to be used has still to be "created" or, better, we are creating it. Therefore, I think that in this phase, the first step we can make, even if apparently simple, is the one to reach an uniformity in terminology; in this way we will be able to associate to a certain term the same concept.

This will be a further, small methodological step which could help UFO research to enter the range of disciplines correctly recognized as scientific ones.

ROBERTO FARABONE

## UFO Research in Italy

Dear Editor,

In this letter we would point out the UFO research policy in Italy. We can examine the question with two different approaches:

- a) scientific activity of researchers belonging to the official science;
- b) activity carried out by civilian organizations.

We think in the academic sphere the situation is everything but propitious. The main cause of this is the great intellectual myopia of the scientific class who fears to become ridiculous when it takes into consideration matters unusual to the classic scientific research. Young researchers, therefore, realize that there is a certain utility in attending UFO studies, but only if they think that the question is not looked at as an official involvement, but as a queer personal hypothesis. In other words, we find a

situation very similar to Copernico's, whose hypothesis was accepted only as a mathematical fiction and not as a fact to be scientifically debated.

This point of view is the result of a general situation. This situation, in its turn, is created and supported by the old-fashioned and incapable politicians who succeeded in instilling opportunism and idleness into everything, in stopping all incentives to research with captious bureaucratism and, in the end, have obstructed every attempt of research in very important fields, as, for instance, in energetic field.

Thus we can easily derive that UFO research, conducted by official scientific organizations (even military), can be thought as nothing.

For civilian organizations interested in UFO questions, the situation is not better. These organizations are in fact subdivided in a lot of independent but not coordinated little groups. Their interest concern a wide spectrum of subjects which are not always unifiable (UFO, space archaeology, parapsychology and so on). They often start from an 'a priori' hypothesis on UFO nature, trying to confirm it. In these groups there are often enthusiast and good-willing supporters, who, however, have got a poor technical and scientific preparation. Moreover, they usually depend on some editorial publishing house who tries in maintaining alive a certain interest about sensation, issuing toward an effective scientific research.

Our question is: how can we find a remedy to this defect? Even here we must examine the matter from two points of view: official scientific research and

independent civilian organizations.

As to official scientific research, we think it is very hard to proceed from its inside. Perhaps the only possibility is that the international scientific community takes UFO research into real and serious consideration, so that the academic italian world too, overcoming its idleness, follows these indications which are acknowledged by the others. Unfortunately this is the sole way to reach official science, unless young researchers awake a need for new investigation fields.

As to various independent organizations, we can reach an easier solution.

Our opinion is that it is necessary to eliminate the influence of some publishing house, to persuade people, with an ACTIVE EXAMPLE, to perform a more correct and omogeneous way of research, to give a common trend, purpose and methodology. This can be reached by a wider divulgation of everything is done in a correct and serious way all over the world.

We think, for this outcome, it is very useful a more frequent and quick exchange of news and results among serious researches, either official or independent in the UFO area.

One of the greatest difficulties is probably the great confusion and mystification about scientific research, which is not always an exciting work or a star job, but very often the hard routine work of a humble artisan.

ROBERTO DORETTI  
Segrate (milano) - Italy

## UFOLOGY

James McCampbell  
 Jaymac Co., 12 Bryce Court,  
 Belmont, CA., U.S.A. 1973.  
 \$ 3.95

The author begins the development of his UFO hypothesis by asking us to consider that UFO's are real mechanical creations that appear and perform in a manner in accord with the accounts of witnesses; that is, suppose that these objects are real and manufactured and are not like anything else in the background and environment of the witness and then let us examine the data. From present analysis, adds the author, the total number of reports is so large that contamination of source material is not likely to negate the general findings.

The ultimate assessment of the UFO phenomena from a scientific viewpoint would come from a methodological approach but at the same time we must realize that sightings cannot be reproduced in the laboratory, neither can a UFO be captured for detailed examination nor the time and location of future sightings be predicted.

The author proceeds with a statistical breakdown of the various sightings categorized as to shape of vehicle (disk, sphere, or other), size, composition and luminosity and the nature of the rainbow colors. An interesting explanation is given for the sequential multicolored lights observed as the UFO is changing speed. The phenomena as discussed by the author is probably related to energy changes pumped into the atmosphere by the UFO on an atomic level. The observation that sometimes several colors are produced at the same time points to a highly selective process for stimulating the emission of light, very likely in the microwave spectrum of the noble gases.

The hypothesis that emission of radiation in the microwave spectrum is responsible for many other effects such as the "buzzing sound" often produced from the UFO is proposed as well. The effect may be due to high frequency radiation pulsed at a low audio rate. Other effects of high frequency electromagnetic radiation would be manifested in the failure of electrical systems in autos, large scale power failures such as that seen in 1966 in New York, and physiological effects including paralysis in humans and animals.

There are also chapters on flight and propulsion systems and the physical types of pilots and passengers observed.

The author concludes that in light of recent developments, it is the duty of the

government to either reveal what it knows or order a large scale scientific investigation for public knowledge. A detailed account of how this project might proceed is outlined. The objectives of this project would be twofold:

- (1) To confirm absolutely the existence of UFO's in scientific context and to identify any advanced technologies.
- (2) To define the new technology or technologies and potential applications.

The author presents an impressive case for the existence of advanced vehicles of an unknown origin after examination of large number of sightings with insights that should encourage us to expand our efforts in international data collecting.

*Michael L. Broyles  
Honolulu, Hawaii*

## WRITING SCIENTIFIC PAPERS IN ENGLISH

Maeve O'Connor & Peter Woodford  
Elsevier-Excerpta-Medica-North-Holland  
Amsterdam 1976  
Dfl. 25.00 (\$ 9.75)

I strongly recommend either to authors or referees of UFO PHENOMENA the reading of "WRITING SCIENTIFIC PAPERS IN ENGLISH" written by Maeve O'Connor & Peter Woodford and published by Elsevier-Excerpta Medica-North-Holland, Amsterdam, 1976. Its price is Dfl. 25.00 (\$ 9.75).

This Work is a practical and unambiguous Guide for Authors commissioned and sponsored by the European Association of Editors of Biological Periodicals (ELSE) together with the Ciba Foundation for the Promotion of International Cooperation in Medical and Chemical Research and other first-rate scientific institutions.

It provides both experienced and inexperienced writers of *any* discipline with practical advice on how to prepare their work for publication.

Moreover this guide takes authors of *any* nationality step by step through the arrangement of an article in English for publication in a scientific journal. In conclusion a *must* for all serious student.

And last but not least this is the emerging lesson of this excellent booklet: a careful preparation of manuscripts will aid prompt publication whereas carelessness will cause delay.

The Managing Editor

## QUARTER CENTURY STUDIES OF UFO'S IN FLORIDA NORTH CAROLINA, AND TENNESSEE

George Fawcett  
90 pp. Pioneer Printing Co.,  
Mt. Airy , North Carolina, 1975  
\$ 4.15

George Fawcett is an internationally known veteran civilian UFO investigator with more than 30 years experience and has summarized many of his studies in the southeastern U.S. in this report.

This paperback discussed not only the quarter century studies in the above regions but also the massive UFO wave of 1973, American UFO wave of 1974, and the global wave of 1974. The work is supplemented by statements by worldwide authorities, a list of organizations and publications and an interesting section of diagrams and photographs.

Among the author's future goals are the establishment of an educational or tourist attracting museum or research center in North Carolina or elsewhere.

The basic format is a brief survey of the more important sightings and makes for rapid informative reading.

*Michael L. Broyles  
Honolulu, Hawaii*

## PERIODICAL PUBLICATIONS IN UFO AREA

### LUMIERES DANS LA NUIT

Revue mensuelle du GROUPEMENT INTERNATIONAL LUMIERES DANS LA NUIT.

Abonnement 60 Fr. à Mr. R. Veillith  
43400 Le Chambon sur Lignon - France.

### UFO INFO

Bulletin trimestriel du GROUPEMENT ETUDE SCIENCES AVANT-GARDE (GESAG).

Abonnement 280 B.F. Mandat International à Mrs. Jenny Deduytsche.  
Leopold-I-1aan, 141  
B-8000 BRUGES - Belgium.

## STATE OF THE ART?

by Francesco Izzo

We sincerely hoped to show, in the first issue of UPIAR, the level of development reached in scientific research into UFOlogy during 1976. We aimed at putting together the most significant contributions after an accurate selection from our already numerous referees.

All this with the precise intention of offering to our readers as true an outline as possible of the major advances made throughout the world in the study of UFO phenomena.

The first flattering success could be considered the gathering together under the same roof of so many researchers, some of them young but nevertheless just as qualified as some of the old "leaders" in the field. Anyway it is right and proper to take note on the one hand of the average scientific level of the manuscripts submitted for publication (which constantly do not observe the instructions about compilation given to authors) and on the other we are compelled to record an almost general lack of cooperation from the most distinguished members of the UFOlogical scientific fraternity.

In particular I would like to dwell on this last aspect.

Those who until recently were the most prominent voices in this need for renewal (present in every serious student) today appear to be the *new mandarins*" unconscious instruments of the Establishment with whom, not so long ago, they strongly disagreed.

The words of Hynek and Vallée, to mention only two of the "big names" in present-day UFOlogy, have the unpleasant flavour of an Orwellian "New-Speak" and nothing else.

Are we facing a new outlook? I don't know.

However I feel that we have to prepare some shock treatment so that UFOlogy can be enriched by new blood and become more credible.

Epistemologists teach us that the alternative would be a scientific tragedy with more disastrous effects than the Condon Committee: a "normal science" founded on the agreement of its adherents and on the enslavement to its tenets. Do we really want the epidemic to spread?

## NOTE

Because of the enormous postal delay we are compelled to show here a tentative outline of the Editorial Board of the journal.

For the same reason we are prevented from presenting our Advisory Board even if Drs. Hynek, Schwarz, and other prominent figures in UFO research take already active part in it.

At this date we are still receiving several acceptances coming from the growing scientific fraternity interested in a serious approach to UFO problem.

Therefore only in UFO PHENOMENA Vol.2 No.1 (1977) we shall be able to offer to our readers a more comprehensive picture of our contributors.



*The Author Index as well as the Subject Index for Volume 1 will appear in the next issue of UFO PHENOMENA scheduled for publication in MARCH 1978 as part of a cumulative index for the years 1976 and 1977.*

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I also owe a great deal to Miss Liz Morris for invaluable help with skillful revision of the English text of the manuscripts.

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Finally I want to thank everyone who gave us his constant contribution eager to produce an educationally and scientifically useful instrument.

The Editor-in-Chief



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## ERRATA CORRIGE

*Apart from some misprints the maiden issue of UFO PHENOMENA (Vol. I N° 1, 1976) includes a gross mistake occurred in both type-setting and photoreplication processes. It refers to the whole page 32 making part of a paper written by Miguel Guasp to whom we duly give — as to our readers — our most sincere apologies. This page with proper changes in the arrangement of sentences appears on the side.*

to have effected the process of study, tabulation, and cataloguing of cases under the same criterion; in other words, that the sample be homogeneous, as observations studied in the same country are; and, in the second place, we would have to be careful not to give more importance to the general form of the distribution than to the "result of the sum." We should carry out, therefore, a study of directions.

In any case, to leave this question unanswered should not reduce the importance of the results obtained, or distract our attention from them. These results seem to indicate to us that there exists a certain correlation between parameters characteristic of the phenomenon, ready to be revealed. The study of the physical aspects of the phenomenon thus acquires a new and relevant importance.

Nor should our confidence, in this sense, be dampened by the necessary limitations of this study. The form of the geographic distribution in Spain does not seem to be something inherent in the Peninsula. In France, for example, the phenomenology seems to be orientated in the form of a principal diagonal (NE-SW), and it is curious that it is exactly in this direction where the still inexplicable BAVIC lies (9), and, even more curious if we remember that said diagonal seems to play an important part in the reconstruction of the rest of the geographic distribution. In the USA the distribution along hybrid components also seems to predominate; that is to say, along the two diagonals NE-SW and SE-NW, a result which shows the low frequency in the areas corresponding to the "pure directions" and the high frequency in those corresponding to the "hybrid directions," the same as occurs in Spain.

To sum up, it is possible that we have found a promising pattern in the study of the phenomenon; however, we strongly recommend that this study be repeated in other countries and with other waves.

I should point out, finally, that if indeed the "result of the sum" unquestionably follows from the analysis of the data, the proposition that the principal diagonal plays an important part in the reconstruction of the rest of the distribution could perhaps be affected by our subjective opinion, though I think that the proposition can contain great value. Time will tell.