

of the reactionary attitudes of their employers and of some of their colleagues. They approached us because they were intrigued by the broad outlook and interesting lines of thought they discovered in our pages.

For the benefit of readers old and new our policy will remain the presentation of reports on all aspects of the UFO phenomenon and peripheral topics, and of all views thereon. Thus we may all follow with interest the discussions engendered for example by the ideas—intuitive? prudent? imprudent?—of our friend John Keel. To stimulate our minds further there will be other ideas of long-standing writers for FSR like Gordon Creighton, Maxwell Cade, Bryan Winder, Aimé Michel, Jacques Vallée, Berthold Schwarz, Max Edwards and Peter Sharp, to mention but a few.

Because we present an open forum, it is to be expected that, apart from those who offer constructive criticism in our pages, there will be other critics during the coming years who, lacking either the *nous* to understand, or the wish to look at views other than their own, will label us as “way out” or cultist. We’ve met this sort of thing in flash-in-the-pan journals throughout our

fifteen years; parasitic growths which claim to present the subject “straight”—which, presumably, means allowing to appear only those reports and comments which are palatable to the editor and publishers—and which attack all and sundry who do not conform to this false “respectability”. Such a policy is fraught with dangers, not the least of them being that the one and only “straight” line followed could well prove wrong, in which case the blinkered adherents would find themselves out on a limb.

All in all, with continuing reports, growing scientific interest and a gradual progress towards understanding, it seems that this controversial subject of ours, plagued with its customary smattering of backbiting among the “faithful”, will remain as persistently lively as ever during the Seventies.

\* Some months ago a package, containing copies of the Report mutilated in this way, was sent to us by Dr. James E. McDonald of Arizona University. We thank him both for his courtesy, and for the detailed instructions he gave on how to dismember the books for documentation and filing purposes!

#### **A.A.A.S. SYMPOSIUM: EDUCATIONAL ASPECTS OF UFOs**

In the opening talk in Session 1 of the American Association for the Advance of Science Symposium, at the Sheraton-Plaza Ballroom, Boston, on December 26, 1969, the Chairman, Dr. Thornton Page, discussed the educational aspects, both of the Symposium and of UFOs in general. He noted the “valuable collection of information in the Condon Report, which is difficult reading for the average layman.”

Dr. Page went on to say that public-opinion polls show that over 40 per cent of adult Americans believe that “Flying Saucers” are real visitors from other worlds, whereas many scientists feel that such visitations are impossible and that discussion or study of UFOs is a waste of time. However, he said he believes that a large middle group of “liberal” scientists are willing and able to apply their specialist knowledge. He said “this will educate both the scientists and the public in matters of great current interest” (such as space travel, the earth’s atmosphere, analysis of imperfect data, social psychology and the origin of life).

The second educational aspect is the use or misuse of student interest in UFOs in teaching science. Disagreeing with Dr. E. U. Condon, Dr. Page asserted that “student interest in a subject, even if it derives from misconceptions, is better than no interest at all.” He said that current data on U.S. college students show declining interest in science, and that he found that a general course entitled “Flying Saucers” attracted many students who would otherwise have taken no physical science course at all. Dr. Page claimed that most of his 100 students learned a good deal of introductory astronomy and physics, and that they are able to recognise the roughly 90 per cent of UFO visual sightings which in the past have been identified by the Air Force.

Turning to the magazine articles and “pulp press” publications on UFOs declaimed by Dr. Condon, Dr. Page reviewed 71 books printed since 1948, 28 pamphlets and 73 magazine articles printed in the last nine years. Publication dates imply waves of United States public interest in 1949-50, 1954, 1957-60, and 1966-68. The point of view, he said, ranged from scientific evaluation to highly speculative interpretation. This range of “speculativeness” is greater for the books on UFOs than for magazine articles: 10 per cent of the books are extremely conservative and 20 per cent are highly speculative with emphasis on extraterrestrial contacts. Over 50 per cent of the magazine articles are non-conservative inquiry, and another 20 per cent are historical accounts of one or more UFO reports. Both books and magazine articles include 20 to 30 per cent emphasising the extraterrestrial hypothesis. Dr. Page claimed that most readers recognise the extremely speculative “contact” stories as a type of science fiction, hence these books can be discounted. Over 75 per cent of the UFO literature is reasonably scientific.

[*Extracted from Press Release summaries of papers prepared by Drs. Thornton Page and Carl Sagan.*]

# TWENTY-ONE YEARS OF UFO REPORTS - 1

*J. Allen Hynek*

Dr. Hynek, Professor of Astronomy at Northwestern University, and Director of Dearborn Observatory, has asked me to mention that this verbatim account of his address to the American Association for the Advancement of Science (AAAS) symposium of December 26, 1969, is a forerunner of the book which he is planning. As this book is in its early stages of writing, we are fortunate to have this opportunity of recording the views of the scientist who was, for more than twenty years, civilian consultant to Project Blue Book, the United States Air Force UFO investigatory establishment. As most readers know, the Project was closed just before Christmas, 1969.—EDITOR.

MY role here today is that of reporter; to report to you on my score or so years of experience with UFO reports (no, I do not say UFOs, for I myself have never had a UFO experience) and with those who make such reports, from this and many other countries. I was asked in 1948, as an astronomer then at Ohio State University, to review the UFO reports received by the Air Force to determine how many of them originated from misperceptions of astronomical objects or events. This consultancy continued across the years and gave me the chance to monitor the flow of UFO reports submitted to the Air Force, and to observe the Air Force handling of the problem as first one, then another officer took charge of Project Blue Book.

As reporter of the UFO scene, I am reminded of the old dictum of the reporter: Who, What, Where, When and Why. I will have no difficulty in dealing with the Who, What, Where, and When, for that means simply dealing with facts—particularly with the incontrovertible fact that UFO reports exist, and that the time and location of the reported event is generally known, as well as the identity of the witnesses.

When, however, we get to the "Why"—well, I shall leave that to the rest of the speakers, but I shall challenge their explanations if they are not conversant with the first four—the Who, What, Where, and When. I am very weary of pontifications by those who have not done field work, so to speak.

Indeed, I would like to say a word about scientific methodology as it pertains to this problem. I have discussed this at length with the noted Canadian philosopher of science, Thomas Goudge.

"One of the most interesting facets of the UFO question to me," Goudge writes, "is its bearing on the problem of how science advances. Roughly I would say that a necessary condition of scientific advance is that allowance must be made for (a) genuinely new empirical observations and (b) new explanation schemes, including new basic concepts and new laws." Goudge continues and points out that throughout history any successful explanation scheme, including 20th century physics, acts some-

what like an establishment and tends to resist admitting genuinely new empirical observations, particularly when they have not been generated within the framework of that explanation scheme as, for instance, the reluctance to admit meteorites, fossils, the circulation of the blood, and in our time, ball lightning. History is replete with such examples.

Or, if the establishment does quickly accept such new observations it tends to assimilate them into the going framework—as, for instance, the attempt to admit the existence of meteorites as stones that had been struck by lightning. "Hence," Goudge concludes, "the present establishment view that UFO phenomena are either not really scientific data at all (or at any rate, not data for physics) or else are nothing but misperceptions of familiar objects, events, etc. To take this approach is, surely, to reject a necessary condition of scientific advance.

## **Kirtland AFB radar-visual report**

One can never know whether UFO reports represent genuinely new empirical observations, however, if one commits the type of logical fallacy strikingly demonstrated in the following Air Force analysis of a radar visual UFO report from Kirtland Air Force Base. Two witnesses in the control tower reported that at 11.00 p.m. an object which looked to them, through binoculars, like a lighted up-ended automobile came to within 200 feet of the ground when it disappeared behind a fence in a highly restricted area, easily visible from the control tower, whereupon it rose abruptly at a very high angular rate and disappeared. It was observed visually for about 6 minutes, about half of that time through binoculars, its trajectory tracked both visually and in part by radar.

The Air Force ascribed this sighting to aircraft, but here is what the officer who investigated the case reported: "The two sources are Airways Operations Specialists with a total of 23 years experience; both were on duty in the control tower at Kirtland AFB when the sighting was made—both appeared to be mature and well poised individuals, apparently of well above average intelligence, and temperament-

ally well qualified for the demanding requirements of control tower operators. Although completely co-operative and willing to answer any question, both sources appeared to be slightly embarrassed that they could not identify or offer an explanation of the object which they are unshakably convinced they saw. In the opinion of the interviewer, both sources are considered completely competent and reliable."

Project Blue Book gave the following specific reasons for explaining this report as that of an aircraft:

1. The observers are considered competent and reliable sources and in the opinion of the interviewer actually *saw* an object they could not identify.
2. The object was tracked on a radar scope by a competent operator.
3. The object does not meet identification criteria for any other phenomena.

So, the witnesses were solid, the radar operator competent, and the object unidentifiable as any other phenomenon, and therefore the object had to be an aircraft. Clearly, if such reasoning is applied to all UFO reports we can hardly expect to find out whether any genuinely new empirical observations exist to be explained.

#### **Bewildering and confusing data**

Schroedinger, father of quantum mechanics wrote: "The first requirement of a scientist is that he be curious; he must be capable of being astonished, and eager to find out." Perhaps he should have added . . . 'and be ready to examine data even when presented in a bewildering and confusing form.'

There is much in the UFO problem to be astonished about—and much to be confused about too. It is quite understandable how such confusion has arisen. Over the past twenty years I have had such a sufficiency of experience with crackpots, visionaries and religious fanatics that I hardly need be further reminded of people who espouse the idea of UFOs as visitors from outer space for their own peculiar purposes. You will note that I say "espouse the idea" not "make UFO reports". Very rarely do members of the lunatic fringe make UFO reports. There are many reasons for this but, primarily, it is simply that they are quite incapable of composing an articulate, factual, and objective report.

In addition to being fully aware of the cultists and the manner in which they muddy the waters even though they *don't* generate UFO sightings. I am also quite, quite aware of the wide-spread ignorance of many people of astronomical objects, high altitude balloons, special air missions, mirages and special meteorological effects, and of their willingness to ascribe the viewing of such to the presence of something mysterious.

This group of people, as contrasted to the crackpots, is far more of a factor in the UFO problem because they *do* generate reports which represent a

high noise level; so high, in fact, than many who have not looked carefully into the matter are quite satisfied that all UFO reports stem from such misperceptions. The facts in the case however, are that it is relatively simple for an experienced investigator to sort out and quickly eliminate nearly all of the misperception cases.

It is a pity that people so often are not well informed, objective, and accurate reporters; I have been looking at UFO reports since 1948 and I am nauseatingly familiar with UFO reports spawned by Venus, twinkling stars, aircraft, etc. Some 18 years before the Condon Committee was formed I was already aware that the great majority of UFO reports were indeed nothing more than misperceptions by the uninformed.

#### **A need to filter reports**

Such reports of course, must be deleted before any serious study of the UFO question can begin. Let it be clearly underlined that from this moment on I am speaking only of UFO reports which *remain* unexplained by trained investigators; then, and only then, are we truly dealing with something that is *unidentified*, and unidentified by people capable of making an identification. In short, an original UFO report must pass through a narrow band-pass filter before it qualifies as worthy material for scientific study, the objective of which is to determine whether any genuinely new empirical observations exist; whether there truly is a UFO phenomenon. Only those reports which survive the running of this gauntlet can qualify.

An objection to this approach immediately arises: Aren't we just rejecting everything but the tail-end of the distribution curve of human reactions to visual stimuli? This is, of course, what I firmly believed during my first years of association with the UFO problem. It still may be true, but, in my opinion, it is open to very serious question. We can hold that assumption—that we are dealing with the vagaries of human perception—only if we believe that we deal with a homogenous set of observations; that is, the tail of the distribution curve must belong to the same universe of data. Otherwise it is like examining the distribution curve of the sizes of oranges and trying to fit watermelons to the tail of the distribution curve.

Let me define the UFO phenomenon, the *existence* of which we wish to determine or deny, as that phenomenon described by the contents of reports of visual or instrumental observations of lights or objects in the air (or near to or on the ground) whose presence, trajectories, and general character are not explainable in *verifiable* physical terms, even after intensive study. The Condon Report furnishes us with many examples.

For years I strongly resisted accepting the idea that a genuine UFO phenomenon might exist, preferring to hold that it was all a craze based on hoaxes and misperceptions. As my review of UFO reports continued, and as they grew in number to be of

statistical significance, I became increasingly concerned that the whole subject didn't evaporate as one would expect a craze or fad to do and I became increasingly aware that the phenomenon of UFO reports not only persisted in this country but in many areas over the world. And it began to concern me that if there were some world wide compulsion to report strange things, why these particular subsets of strange reports out of an infinite universe of possible strange reports?

### Degrees of strangeness in UFO reports

The degree of strangeness is certainly one dimension of a filtered UFO report. The higher the strangeness index, the more information elements the report contains which defy explanation in ordinary physical terms. The other dimension, or co-ordinate, is the probability that the report refers to a real event; in short, did the strange thing that defies explanation in normal physical terms really happen? What is the probability that the witnesses described an actual event of high strangeness? This represents a different evaluation, not of the report this time, but of the witnesses, and involves different criteria.

The criteria I have used in determining the co-ordinates of points to be included in the diagram are these:

For Strangeness: How many individual items, or information bits, does the report contain which demand explanation, and how difficult is it to explain them, on the assumption that the event occurred?

For Probability: Integrating over several witnesses, what is their collective objectivity? How do they respond to tests of their ability to gauge angular sizes and angular rates of speed? What is the condition of their eyesight? What are their medical histories? What technical training have they had? What is their general reputation in the community? What is their reputation for publicity seeking, for veracity? What is their occupation and how much responsibility does it involve? No more than half-scale credibility is to be assigned to one-witness cases.

If one now plots the strangeness of a report against the credibility of the witnesses, or against essentially the same thing, the probability that the event happened more or less as stated, and obtains an interesting scatter diagram which may be called the strangeness-probability diagram ( $\Sigma\pi$  for short). All points plotted represent UFO reports that have passed through the misperception and hoax filter. Clearly, the most provocative and potentially scientifically important UFO reports are those in the upper right hand region of such a diagram, the locus of reports that contain many information elements and have a high probability rating, reports for which the witnesses were of such a calibre, and the circumstances surrounding the reported event were such as to make it virtually impossible to discount the reported event. Examples of such information bits are craft description, inertial laws, ability to affect animals, to interfere with automobile ignition sys-

tems, and to leave visible marks on land and on cultivated fields. The Condon report includes several such cases.

### The dilemma facing reliable witnesses

In my long experience in personal contacts with witnesses, one paramount thing has impressed me above all, and that is that those witnesses who generate high  $\Sigma\pi$  reports are all trying to describe an *event* for the description of which they have an entirely inadequate vocabulary, much as an aborigine would lack the vocabulary to describe a supersonic jet or a nuclear submarine. Whatever else can be said of the UFO phenomenon, it represents for the witness an undoubted event, and an event for which he was totally unprepared. The majority of such witnesses, contrary to popular belief, were originally highly sceptical about UFOs. Suddenly they had an experience which profoundly affected them—sometimes traumatically. Speaking from years of experience with witnesses, I can say that faced with the experience of a UFO event, the witnesses are generally perplexed and uncertain as to what to do about it. Invariably they attempt to explain it in ordinary terms and fail. Curiosity overwhelms them, yet they know only too well that they will be targets for ridicule (for as they confess, they had often in the past ridiculed others) if they report. Generally they confide only in their own family, if at all, and they often prefer to remain silent. Sometimes they will finally report observations years after they have occurred.

Any serious investigator is aware that a reservoir of latent reports must exist. Not only has the Gallup poll so indicated, but I frequently try the experiment of asking for a show of hands of those who, either themselves or their close friends, had a puzzling UFO experience. I generally find that more than 10% of the audience will raise a hand. But when I ask for hands of all those who *reported* the event in some official manner, I find virtually no hands raised. Judging from this and other personal observations, I would estimate that for every officially reported UFO sighting there exist many dozens that have gone unreported.

I believe that as scientists we should be astonished that high  $\Sigma\pi$  reports even exist. What does a serious person holding a valued reputation stand to gain by making such a report? Why do people go to the trouble of filling out questionnaires, of subjecting themselves to sometimes hostile inquiry, and of being the target of unpleasant attention?

The reason appears to be twofold. Witnesses have told me that they had not intended to say anything about their experience but they felt that it might be of importance to the government, or to science, and felt it their duty to report. The second reason is curiosity. They want to know whether anyone else experienced the same event, and whether the event has a rational explanation. They are visibly reassured when I tell them, if it be the case, that their sighting fits a pattern and resembles other reported sightings from various parts of the world.

(Part II will be published in our next issue.)

# HUGE LOW-LEVEL UFO OVER READING

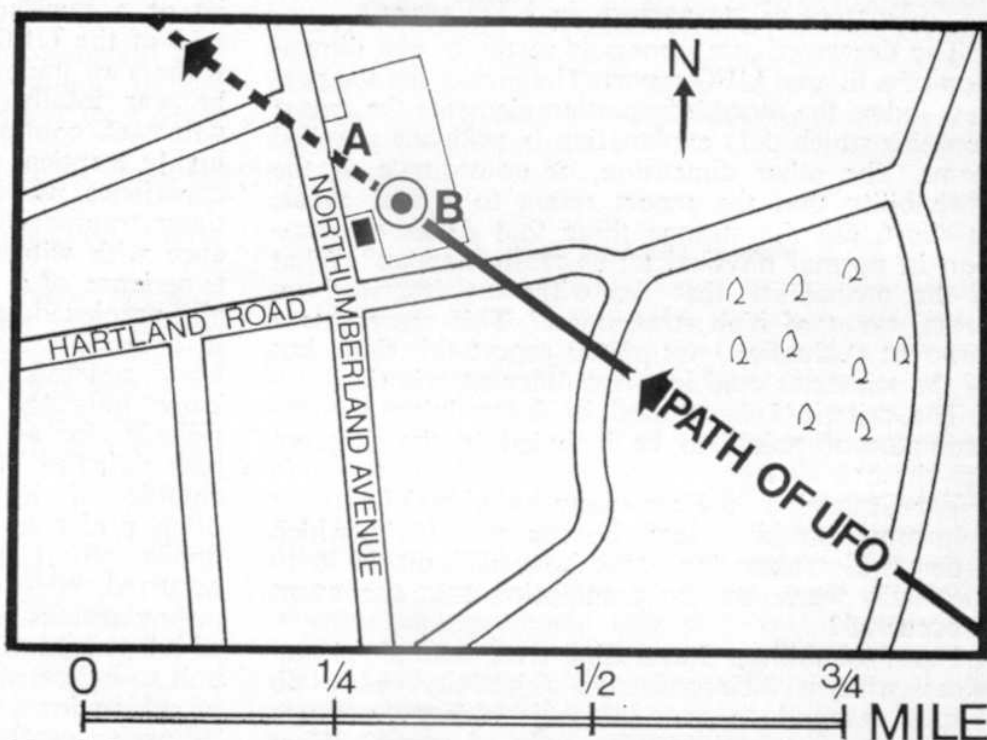
*Peter J. Wroath*

UFO observations made personally are, naturally, the most convincing evidence for believing in the reality of the phenomenon. There are, however, many people interested in the subject who have never seen a UFO and whose only recourse therefore is to rely upon the testimony of others, usually at third hand via an investigator. Unfortunately neither the witnesses nor the investigator is likely to be known personally. Inevitably, with the best will in the world, there is a certain feeling of unreality about the whole business. This aspect of UFO research, it is well known, bedevils many efforts to gain a wider acceptance of the phenomenon.

Apart from a personal sighting, an account of a UFO sighting at first hand—in an interview with eye witnesses—has, I feel, the greatest impact upon the imagination. Perhaps I am fortunate to be able to claim both of these experiences\*. The second of them occurred recently when a colleague and myself interviewed Mrs. Gloria Bomford and heard from her an amazing story of a UFO encounter, at close range, which occurred in daytime in the suburbs of a large town in the South of England.

Mrs. Bomford and her family live at Drayton, a village near Abingdon in the Thames Valley, where her husband owns a joinery manufacturing business. Mrs. Bomford, an attractive and intelligent housewife, was visiting her sister who lives at Reading, a town about 26 miles away, when the sighting occurred. The date was September 6, 1969, when Mrs. Bomford set off from Drayton in the family car with her mother and two daughters, Jacqueline, aged 8 and Karen aged 7, to travel to her sister's flat in the

\* See FSR, Vol. 12, No. 5 (September/October 1966).



The circle and dot indicate the position of the UFO over the John Rabson Park. "A" was position of Mrs. Bomford and children; "B", the footballers. The dotted line indicates the ascending departure of the object towards the Basingstoke Road

south-eastern suburbs of Reading. The apartment overlooks the John Rabson recreation ground; a pleasant park with swings and other amenities for children.

It was a warm, late summer's evening; the skies were clear and there was no wind. The setting sun appeared as a large red disc glowing through a slight evening haze. Mrs. Bomford and her mother had been observing from the balcony of the apartment the periodic flights of migratory geese, crossing the recreation ground in formations, travelling in an easterly direction. It was around 7.00 p.m. and Mrs. Bomford felt it was time to collect her children and to start thinking about returning to her own home.

The children were playing on the swings about 300 yards away. Mrs. Bomford walked over and talked to

them for a few minutes, then, as they were leaving the swings to return to the flat, another skein of geese passed over. Drawing the children's attention to the birds, all three stood still and watched the geese disappear in the distance.

It was then that Mrs. Bomford noticed a small speck in the same region of the sky that seemed to grow larger as she watched. As the object came nearer its appearance seemed to resemble a biplane. When the object came within sight of the park it began moving along a steadily descending flight path towards them, as though it intended to make a "landing" in the park. By this time it was clear that the object was not any conventional type of flying machine she could recognise.

Mrs. Bomford became quite