

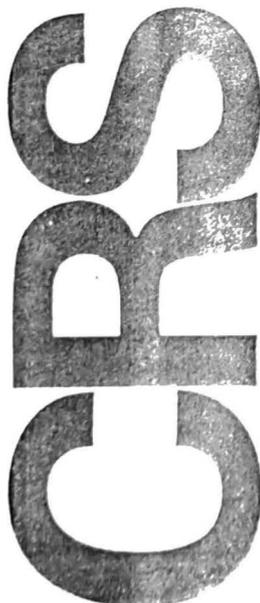
THE UFO ENIGMA

By Marcia S. Smith and George D. Havas, Science Policy Research Division. 143 pages. June 20, 1983. Unidentified flying objects (UFOs) have been a source of concern, anxiety, and ridicule for more than three decades in the United States, and for centuries on a global scale. The question in the case of UFOs is not whether there is other intelligent life in the universe, but whether it has visited earth, and if not, then what accounts for the thousands of reports of strange lights and phenomena which seem to have no other explanation? This report is an updated edition of the 1976 CRS study by the same title, and adds material on what has happened since the mid-1970s in terms of U.S. government involvement in solving the UFO puzzle, and information that has been released under the Freedom of Information Act. Order No. 83-205 SPR.

THE UFO ENIGMA

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ABSTRACT

Unidentified flying objects (UFOs) have been a source of concern, anxiety, and ridicule for more than three decades in the United States, and for centuries on a global scale. The question in the case of UFOs is not whether there is other intelligent life in the universe, but whether it has visited Earth, and if not, then what accounts for the thousands of reports of strange lights and phenomena which seem to have no other explanation? Although the number of reports in the media about UFOs has dwindled in recent years, the film "Close Encounters of the Third Kind" rekindled interest in the UFO debate for a short time, and the movie "E.T. -- the Extraterrestrial" refocused attention on the possible existence of other intelligent life in the universe.

This report is an updated edition of the 1976 CRS study by the same title, and adds material on what has happened since the mid-1970's in terms of U.S. Government involvement in solving the UFO puzzle, and information that has been released under the Freedom of Information Act.

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INTRODUCTION *

Although the term UFO (for unidentified flying object) has been popular for only about 36 years, the phenomenon it refers to has been observed throughout recorded history. It is an unfortunate term, for literally anything seen in the sky and not immediately recognized is included. In the ancient skies, UFOs were especially numerous.

What are today's UFOs? And what type of person reports them to authorities? Publicity seekers, practical jokers, or sane, intelligent people genuinely mystified by something they have seen? This report cannot, and does not attempt to, answer those questions. After 36 years of concentrated interest in this country alone, experts cannot agree on what inhabits our skies. The U.S. Air Force had official responsibility in the field for 21 years and concluded that whatever was there, it was non-hostile and non-alien. But there are many who disagree.

In order for Earth to be visited by beings from other planets, there must be other inhabitants in the universe. The subject of extraterrestrial intelligence, as it is called, is too involved to be included here, and the reader is referred to a previous work by this author for the House Science and Technology Committee entitled "Possibility of Intelligent Life Elsewhere in the Universe" (revised October 1977) for a discussion of this topic.

* The 1983 update of this report was prepared by Mr. George D. Havas of the Library of Congress Science and Technology Division while he was on special detail to the Science Policy Research Division of the Congressional Research Service. The original 1976 report was prepared by Marcia S. Smith of the Science Policy Research Division, CRS.

In addition to discussion about UFOs in general, there have been theories advanced that much of our present day knowledge, and indeed our evolution itself, was helped along by aliens. This "ancient astronaut" philosophy and that of the Bermuda Triangle are discussed briefly in an appendix. They are only of peripheral importance to a discussion of UFOs and are included only because they also deal with alien visits to Earth.

I. WHAT IS A UFO?

A. DEFINITIONS

A UFO is an aerial phenomenon or object which is unknown or appears out of the ordinary to the observer.

U.S. Air Force 1/

A UFO is a moving aerial or celestial phenomenon, detected visually or by radar, but whose nature is not immediately understood.

Carl Sagan
Astronomer and Biologist 2/

A UFO is any reported aerial or surface visual sighting or radar return which remains unexplained by conventional means even after examination by competent persons.

J. Allen Hynek
Astronomer and Project
Blue Book Consultant 3/

The most commonly used definition of a UFO is expressed in both the Air Force and Sagan definitions and encompasses the vast files of sightings that either have or have not been later identified as natural phenomena--12,097 from 1947 to 1967. Hynek's definition is more precise since it covers only those that, after investigation, still remain unidentified and are thought by some to be spaceships from other worlds--697 from 1947 to 1967. 4/

1/ U.S. Air Force. Aids to Identification of Flying Objects. Washington, D.C., U.S. Govt. Print. Off., 1968. p. 28.

2/ Encyclopedia Americana, 1967, p. 43.

3/ Hynek, J. Allen. White Paper on UFOs. Christian Science Monitor, May 23, 1967: 9.

4/ Figures are from U.S. Air Force. Project Blue Book 1968. [n.p., n.d.] p. 7.

Since the term in general use can mean either of the above, one must be careful as to the context in which the term is used. There are naturally thousands upon thousands of reports that would come under the first two definitions, since many people can become confused by natural objects such as the planets and stars, and other natural phenomena like ball lightning are not well understood even by scientists.

For the sake of clarification, William Hartmann (Senior Scientist, Planetary Science Institute, Tucson, Arizona) suggested four groups into which sightings could be classified: UFO--unidentified flying object, the original sighting according to the Air Force and Sagan definitions; IFO--identified flying object, a UFO case that has been concretely solved; EFO--extraordinary flying object, something beyond the bounds of recognized natural phenomena; and AFO--alien flying object. 5/ The last two are relatively subjective, since those who refuse to speculate on the possibility of Earth being visited by extraterrestrial life will classify all unidentifieds into EFOs, and their counterparts on the other side of the question will assume that all unidentifieds are AFOs.

Other acronyms have also been suggested and one that has some support is "anomalous observational phenomena" (AOP). The term was coined by Dr. Robert M. L. Baker who notes that although some unexplained phenomena may be occurring, it "may not be 'flying,' may not always be 'unidentified,' and, perhaps, may not even be substantive 'objects,'" 6/ Unfortunately UFO has become the accepted term, and changing the habits of the masses is no easy chore.

5/ Hartmann, William K. Historical Perspectives: Photos of UFOs. In Sagan, Carl and Thornton Page eds. UFOs--A Scientific Debate. Ithaca, New York, Cornell University Press, 1972. p. 12.

6/ Baker, Dr. Robert M. L. [Testimony] In U.S. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects. Hearings, 90th Cong., 2d Sess., July 29, 1968. Washington, U.S. Govt. Print. Off. p. 126.

Douglass Price-Williams has listed four stages through which a UFO report should travel before a determination can be made as to its nature. ^{7/} The first step is the actual reporting of an unexplained aerial incident, where it is labeled a UFO (he also notes a preference for AOP, but acknowledges that UFO has become too rigidly entrenched in our vocabulary). In the second stage, the report is broken down into one of three "populations": (1) reports that are easily explained, without controversy, as known phenomena; (2) reports that one group calls known phenomena while a second group questions that conclusion, and (3) reports that all agree are unknown.

The third stage examines those in the third group (and some from the second). This is the key step, for "failure to define the data at this point makes further analysis unamenable to systematic investigation." Here the questions of witness credibility arises (chapter 2), for the data are usually dependent upon the subjective observations of one or more witnesses, not upon exact measurements. Other than rejecting all present UFO reports and starting anew with a more exact reporting system, Price-Williams suggests going through existing reports searching for clues that can be relied upon to some extent, such as reports where some reference point was available to the witness(es) for distance, size, and speed estimates. Also a cross-correlation of what has been seen over the years in terms of these characteristics might prove valuable.

The final stage of the UFO report calls for a confrontation between data and hypotheses. Price-Williams points out that the crucial test for any hypothesis is for it to be tested, and this is the crucial problem with the extraterrestrial hypothesis. He suggests that outside of actually capturing a specimen,

^{7/} Price-Williams, Douglass R. Psychology and Epistemology of UFO Interpretations. In Sagan and Page, op. cit., p. 224-231.

one would have to "posit a model embodying aerodynamic and engineering properties that are then matched against the observed data as reported." These models are bounded by an upper limit where literally anything is considered possible due to technologies we may not be aware of, and the lower limit which allows not only that the physical model make sense within our framework of knowledge, but that someone be able to construct a realistic model (although not necessarily a working model).

B. DRAWINGS BY WITNESSES

Since Kenneth Arnold's 1947 sighting that began the current interest in UFOs in this country (see chapter 5), many drawings have been made by witnesses to show others what they saw. A few of these are presented below, reprinted with permission from UFOs: A New Look, National Investigations Committee on Aerial Phenomena, (NICAP) 1969.

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II. WITNESS CREDIBILITY

Although UFO reports have been prevalent since the 1940's, it was only in more recent years that studies were made relating to factors that might affect the credibility of those who report the UFOs. In most sightings, there is no hard evidence of any kind, only the reports of eyewitnesses.

Sociologists and psychologists were asked to give their opinions on what type of person reports UFOs, when the evidence seems to be overwhelming that many more UFOs are seen than are reported, for fear of ridicule. J. Allen Hynek reports that when he asks his audiences how many have seen a UFO, more than 10 percent of the audience will raise a hand. When asked how many of them reported the event, few if any respond.

What then is the make-up of UFO reporters, and equally as important, how accurately can a person judge what he is seeing? The situation is probably a stressful one when all faculties are not at their best, and few reference points are available for accurate determination of distance to the object, its size and speed, if moving.

A. SOCIOLOGICAL AND PSYCHOLOGICAL FACTORS

Apparently the first time public attention was focused on this aspect of UFOs was during the 1968 hearings by the House Committee on Science and Astronautics (see chapter 5). Dr. Robert Hall, head of the Department of Sociology at the University of Illinois was called as a witness, and Dr. Roger N. Shepard, Department of Psychology, Stanford University and Dr. R. Leo Sprinkle, University

of Wyoming, submitted papers for the record. A year later the American Association for the Advancement of Science held a UFO Symposium in Boston which included four people from these fields.

Just as other investigators are widely split on the subject of UFOs in general, so are the sociologists and psychologists on the type of people who report UFOs. Drs. Lester Grinspoon and Alan Persky, for example, seem to consider not only the witnesses but those scientists who are vigorously involved in the study of UFOs to be victims of the classic Freudian breast/penis syndrome, thus accounting for the cigar- or saucer-shapes of UFOs. 12/ This author could find no other papers supporting this hypothesis.

Dr. Robert Hall, who was present both at the House hearings and the AAAS symposium, reports that people first try to explain UFOs in terms of familiar objects. Only after the event does not fit into any known category will the witness conclude it is a UFO. He explains that everyone has a set of belief systems that help determine their frames of reference in day-to-day life.

What people believe is usually organized into elaborate systems of belief. That is, each person has a cognitive structure consisting of many items of information and belief which are interdependent, and people are organized into social systems in which each person lends support to belief of others in the system. A lonely belief is an unstable belief. . . .

. . . it appears that people tend in most circumstances to hold beliefs consistent with those of people around them. . . . When reasonable men report events which receive no social support from their friends and do not fit their own prior beliefs, we have to take these reports seriously. 13/

By his reasoning then, as long as the witness is of good standing in the community and meets other criteria set forth in section B of this chapter, his story should be believed.

12/ Sagan and Page, op. cit., p. 233-246.

13/ Ibid., p. 215.

Walter Sullivan, Science Editor of the New York Times, however, points out that UFOs are part of most people's belief systems, put there by the media (it was the media, after all, that coined the term "flying saucer" after Kenneth Arnold's sighting).

It is claimed that witnesses in many of the unexplained UFO cases did not believe in UFOs before their experience with them. My thesis is that we have all been conditioned by the press, radio, and TV--by the general tone of our society--to a hierarchy of beliefs that include for most of the population at least the image of UFOs. 14/

If one does accept that UFOs are a part of virtually everyone's vocabulary, then what other clues can be obtained for determining a witness's reliability? Hall remarks that our legal system has criteria for determining the credibility of witnesses appearing in court, taking into account the person's "reputation in his community, previous familiarity with the event and persons involved in the testimony, apparent motives for prevarication or distortion, and internal characteristics of the testimony such as consistency, recency, verifiable detail and so forth." 15/ Hynek calls this a "credibility index" and feels that "By what right can we summarily ignore [witnesses'] testimony and imply that they are deluded or just plain liars? Would we so treat these same people if they were testifying in court, under oath, on more mundane matters?" 16/

As a consultant for the Air Force for many years, Hynek has had some familiarity with witnesses and has observed that "Very rarely do members of the lunatic fringe make UFO reports. There are many reasons for this; primarily it is simply that they are incapable of composing an articulate, factual, and objective

14/ Sagan and Page, op. cit., p. 39.

15/ Ibid., p. 259.

16/ Ibid., p. 218.

report." 17/ This is an important statement, for it points out one aspect of UFO reports on which there seems to be general agreement, i.e., the more witnesses, the more believable the report. Hynek states:

True, occasionally a lone witness of low credibility will make a highly imaginative report, generated by an obviously natural event. But such reports are a warning to beware of UFO reports from single witnesses. . . . 18/

Philip Morrison agrees. "I would say that no witness is credible who bears a sufficiently strange story. The only hope is for independent claims, several independent witnesses, and then the credibility certainly rises." 19/

There is a danger in this as well, however. There is a psychological condition called hysterical contagion in which a group of people can be led to believe that some event is occurring. It is defined as:

. . . the dissemination of symptoms among a population in a situation where no manifest basis for the symptoms may be established [and where] a set of experiences or behaviors which are heavily laden with the emotion of fear of a mysterious force are disseminated through a collectivity. . . . 20/

The relationship that this condition may have to UFOs is unknown, but both the Condon Report and the AAAS symposium discussed it as a possibility. Two cases cited in both those studies will serve as examples of what the condition entails.

The first is the famous radio broadcast of H. G. Wells' War of the Worlds in 1938. To the listeners of that radio program who had not heard the introductory disclaimer explaining it was only a story and not an actual event, it

17/ Hynek, J. Allen. [Testimony] In U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 5.

18/ Hynek, J. Allen. The UFO Experience: A Scientific Inquiry. Chicago, Henry Regnery, 1972. p. 20.

19/ Sagan and Page, op. cit., p. 282.

20/ Kerckhoff, A. C. and K. W. Black. The June Bug: A Study of Hysterical Contagion. New York, Appleton-Century-Crofts, 1968.

appeared that Earth was in fact being invaded by aliens from another planet. Their reaction was panic with some literally "heading for the hills" and in a few cases, committing suicide. The broadcast occurred at a time when anxiety was high over the threat of war, for Hitler had just occupied Austria and Japan was advancing in China. The populace was primed for news of war and destruction, and panic ensued.

A second case involves a "June Bug" epidemic in a southern factory. In 1962 workers from a section of a textile factory in the South reported a disease symptomized by nausea, skin rash and fainting spells, caused by a tiny insect. In fact, there was no insect. The symptoms had manifested themselves as an outgrowth of strain and frustration felt by the workers.

The Condon report concludes only that this be kept in mind while studying UFO cases, but did not cite it as a definite cause. Dr. Hall at the AAAS meeting decided to ignore it completely as an explanation.

Some effort has been made to liken UFO reports to these cases of hysterical contagion. . . but there are many difficulties in trying to argue that the hard-core cases can be explained in this way. For one thing, the persons reporting UFOs frequently do not interpret them as serious personal threats. They often describe a UFO with puzzlement but not fear. For another, the continuation of UFO reports over at least decades and their spread over all parts of the world would both be unprecedented for a case of hysterical contagion. 21/

Where, then, does this leave the researcher attempting to determine the credibility of a witness? Dr. Roger Shepard, in his statement for the House Science and Astronautics Committee, concluded that:

. . . a scientific study of UFO phenomena is not impossible--just more difficult. For, we are faced for the most part with a problem--not of making physical measurements--but of interpreting

21/ Sagan and Page, op. cit., p. 217.

He feels each object has "a variety of plausible, alternative explanations. Representations of beings with large, elongated heads, alleged to resemble space helmets, could equally well be inelegant artistic renditions, depictions of ceremonial head masks or expressions or rampant hydroencephalia." 35/

In answer to what people are seeing, Sagan draws on one of his own experiences.

Once when I was on the faculty at Harvard I gave a popular lecture on something or other, and in the question period at the end there were some questions about UFO's. I said that I felt at least a great fraction of them were misapprehended natural phenomena. For some reason that I don't understand, policemen are present at all such public gatherings, and as I walked out after the last question, two policemen outside the lecture hall were pointing up at the sky. I looked up and observed a strange brilliant light moving slowly overhead. Of course, I got out of there fast, before the crowd came out to ask me what it was. I joined some friends at a restaurant and said, 'There's something terrific outside.' Everyone went outside. They really liked it--it was great fun. There it was. It wasn't going away. It was clearly visible, slowly moving, fading and brightening, no sound attached to it. Well, I went home, got my binoculars, and returned. Through the binoculars I was able to resolve the lights; the bright white light was really two closely spaced lights, and there were two lights on either side, blinking. When the thing got brighter we could hear a mild drone; when the thing got dimmer, we couldn't hear a thing. In fact it turned out to be a NASA weather airplane.

B. ALLEGED AIR FORCE SECRECY AND COVER-UPS

When the Air Force was given responsibility for investigating the matter of UFOs in 1948, it instituted a policy of secrecy which came under attack from several directions. Donald Keyhoe, a retired Marine Corps Major, was one of the leaders in trying to expose the information he felt certain the Air Force had. Some of the Air Force reports are explained in other parts of this paper, and

35/ Sagan, Cosmic Connection, op. cit., p. 205-206.

indeed most were kept secret (the Project Sign "Estimate of the Situation," the Robertson Panel's conclusions, and most of the UFO sighting reports, for example).

As someone interested in showing the public that UFOs are for real, Keyhoe found the Air Force a major stumbling block and tried on many occasions to expose their operation. He wrote magazine articles and books, culminating in 1973 with an overview of the entire affair entitled Aliens from Space. In that book he goes through the years of Air Force secrecy and what he called "cover-ups" of incontrovertible evidence that Earth is being visited by spaceships from other worlds.

Keyhoe stated that in December 1969, when the Air Force announced that all UFO cases were solved and cancelled Project Blue Book: "At that very time, AF interceptor pilots were trying to bring down these unknown flying objects by secret orders of the Aerospace Defense Command." 36/ He further said that the Air Force continued to investigate incidents even after 1969, concealing their activities from everyone, including Congress.

Some of the early Air Force records were made available in 1967, and NICAP (under the leadership of Keyhoe at that time) published Blue Book Reports 1-12. Keyhoe stated, and copies of the NICAP publication bear out, that the reports were stamped SECRET or CONFIDENTIAL along with a warning statement that if the contents were transmitted to unauthorized persons, it was a crime under the Espionage Act.

Keyhoe discussed cases which do not show up in other literature, involving, for example, jet crashes. He stated that on July 1, 1954 an F-94 Starfire jet was scrambled by Griffiss AFB to intercept a UFO. As the pilot closed

36/ Keyhoe, Donald. Aliens from Space. New York, Doubleday, 1973. p. 3.

on the object "Abruptly a furnacelike heat filled both cockpits. Gasping for breath, the pilot jettisoned the canopy. Through a blur of heat waves he saw the radar observer bail out. Stunned, without even thinking, he ejected himself from the plane." The F-94 reportedly crashed in a town, killing four people and injuring five. Keyhoe said this report was still buried in Air Force files, classified SECRET. 37/

Keyhoe also claimed in his book that during the early fifties, the CIA wanted to take over UFO investigations from the Air Force, and they were the ones that first ordered the debunking campaign. The Robertson Panel was the first step in this process, according to Keyhoe and Major Dewey Fournet (Air Force Headquarters Intelligence Unit) was planning to "give the public the facts" but was foiled by the CIA. They ordered him to work up a "national debunking program" and make UFO reports sound like "poppycock." Keyhoe states that similar actions of secrecy and cover-up extended throughout Project Blue Book (including during the Condon study) and continued into the 1970s.

C. HOAXES AND WITNESS CREDIBILITY

The late Donald Menzel, an astrophysicist at Harvard, opposed the UFO "myth" from the early 1950s until his death in 1976. Among the many other problems facing investigators of unfamiliar aerial phenomena are the deliberate hoaxes perpetrated for publicity purposes, and the teen-age pranks. Twenty years ago, Menzel discussed the hoaxes, and explained their origin this way:

The Arnold story was scarcely 24 hours old before the hoaxers, jokers, and publicity seekers of the Nation moved in. The subject matter lent itself admirably to such activities. People had seen saucers in the sky. People wanted to see more. And so the jokers started tossing wheelshaped objects of all sorts and descriptions

37/ Ibid., p. 28.

diameter; and an egg-shaped bubble about 50 feet long, 20 feet wide and 20 feet deep. Two days later a "slightly embarrassed" mother came forward to explain that her sons had built the UFO from a clear plastic dry-cleaning bag. 40/

The "ludicrously long" size estimates are part of a fault existing in many UFO reports, according to Menzel, and in addition are perceptual problems common to most observers of a strange, sudden phenomenon. Menzel addressed himself to sensory difficulties both in a statement for the 1968 House Science and Astronautics hearings, and at the 1969 AAAS symposium. He gave the following example: A child gets up to go to the bathroom in the middle of the night and turns on a light. One of his parents awakens, is blinded by the sudden illumination, the light goes off, and the parent happens to glance out the window.

He is startled to see a peculiar spot of light floating over the trees and making irregular, jerky motions. He watches the UFO for a minute or two until it finally disappears.

He cannot be blamed for failing to realize that the erratic and often rapid movement of his UFO are those of the after-image, drifting with the similar movements of his own eye. 41/

Among the many mundane objects that are reported as UFOs, Menzel listed birds, kites, hats, paper, plastic sacks, feathers, spider webs and seed pods. He commented that "If you want to see flying saucers just look up."

D. POSSIBLE BENEFITS TO SCIENCE FROM A UFO STUDY

Dr. J. Allen Hynek has had a long association with UFOs. As an astronomer at Ohio State University, he was asked by the Air Force to determine which UFO reports came from known astronomical objects. When Project Blue Book was formed,

40/ Menzel, David. UFOs: The Modern Myth. In Sagan and Page, op. cit., p. 132-3.

41/ U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 202.

Captain Ruppelt formally contracted Hynek to continue that work. His views on the subject have changed during his many years of UFO investigation, and many would now classify him a believer. One of his strongest arguments has been that regardless of whether UFOs are alien spacecraft, the study of UFOs could lead to a greater understanding of other fields of science, such as psychology and physics.

As a scientist himself, Hynek is aware of the methodology needed to deal with the subject and he is also aware of the variety of views of the scientific community. In the latter area, he distinguishes between two classes of scientists who work with the UFO problem:

(1) those scientists who treat the UFO phenomenon with ridicule and contempt, refusing even to examine it, denouncing the subject out of hand; and (2) those scientists who maintain--or might come to believe after examination--that there is a strong possibility that UFOs are purely psychological phenomena, that is, generated wholly by individual or group mental activity. (No scientist who examines the subject objectively can claim for long that UFOs are solely the product of simple misidentification of normal objects and events). 42/

He feels the latter group's views are entitled to discussion and debate, although the views of the former group are not, since they have not examined the data.

Paucity of data is another concern for Hynek. He feels some of this lack of hard core information is due to the investigator not asking questions that would draw such information from the witness. There is also the "signal-to-noise" problem in which the investigator has to separate real UFO reports (the signal) from hoaxes and misidentifications (the noise). But Hynek points out that astronomers are well accustomed to such problems, for they have instrumental errors and atmospheric distortion to contend with.

42/ Hynek, J. Allen. The UFO Experience: A Scientific Inquiry, op. cit., p. 7.

That so many of the UFO reports are interpreted as extraterrestrial vehicles, Hynek feels is "obviously unwarranted without a detailed study of the content of reports of unidentified sightings. . . . For, the 'U' in UFO simply means unidentified, and may cover a wide range of unrelated causes." 43/

Throughout his writings, Hynek refers back to some of the great scientific discoveries in the history of our planet, and how unlikely they seemed at the time. For example, the discovery of radium by Mme. Curie.

Let us suppose that . . . there had been a rumor--an old wives' tale, or an alchemist's story--that there existed a miraculous unknown element which could be used in the transmutation of elements, and which had miraculous healing powers and other exotic properties. Would any scientist, . . . have done what Mme. Curie did to lift the signal out of the noise of tons of pitchblende? Hardly, Mme. Curie knew that there was a signal--it wasn't a rumor. 44/

In hearings before the House Science and Astronautics Committee, Hynek asked, "Can we afford not to look toward the UFO skies; can we afford to overlook a potential breakthrough of great significance?" and later added that even though he can only draw conclusions from reliable data, he is allowed a hunch, and that hunch tells him that "there is scientific paydirt in the UFO phenomenon--possibly extremely valuable paydirt--and that therefore a scientific effort on a much larger scale than any heretofore should be mounted for a frontal attack on this problem." 45/

As to which discipline the effort belongs, Hynek suggested an interdisciplinary approach. He found the field more akin to astronomy than physics in that the data are mostly observational, not experimental, and one cannot predict

43/ Hynek, J. Allen. The Emerging Picture of the UFO Problem. Presented to AIAA 13th Aerospace Science Meeting, Pasadena, Calif., Jan. 20-22, 1975. New York, American Institute of Aeronautics and Astronautics, 1975. p. 3.

44/ Ibid., p. 2.

45/ U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, op. cit., p. 6 and 14.

when something will occur. He suggested that if UFOs do turn out to be extra-terrestrial, the behavioral sciences would certainly prove valuable. He asked for an international effort to establish world-wide trends, stating that if definite patterns are established "the probability that such correlations happened by chance . . . would be vanishingly small. The probability, therefore, that the UFO represents something truly new in science--new empirical observations--would be a virtual certainty. 46/

46/ Hynek, *UFO Experience*, op. cit., p. 227.

3. Congressional Interest

Due perhaps to the controversial nature of subject, Congress has been somewhat reluctant to get into the practice of making statements or holding hearings related to unidentified flying objects. National interest was so acute in the 1960s, however, that two committees of the House of Representatives did hold hearings to learn more about the matter and to quell concerns of their constituents. The first was in 1966 by the Armed Services Committee, the second in 1968 by the Science and Astronautics Committee. Their purpose was to serve as a forum, not to solve the question.

a. House Armed Services Committee Hearings (1966).

As might be assumed from the committee's name, the main interest of its hearings was Air Force involvement in UFOs from Project Sign through Project Blue Book. The only witnesses called were from the Air Force: Secretary Harold Brown (accompanied by General McConnell), Major Hector Quintanilla, Jr., and Dr. J. Allen Hynek, consultant to the Project.

In his testimony, Secretary Brown explained the methods used by the Air Force to study UFO reports and announced that of 10,147 cases reported from 1947-1965, identifications had been made of 9,501. He noted that although the Air Force had not identified any national security threat or any evidence of extraterrestrial vehicles, they would continue to investigate reports with an open mind.

In a special report of the U.S. Air Force Scientific Advisory Board Ad Hoc Committee to Review Project Blue Book (the O'Brien Report), submitted with the Secretary's testimony, the statement was made that the 646 unidentified sightings

"are simply those in which the information available does not provide an adequate basis for analysis." 87/

The report went on to suggest that the Air Force increase the resources made available, so scientific investigation of selected sightings could be subjected to this study. The reports would be available upon request and given wide unso-
licitated circulation among Members of Congress and other public persons.

When asked by the chairman of the Armed Services Committee if anyone thought UFOs were from outside the solar system, Secretary Brown responded:

I know of no one of scientific standing or executive standing or with a detailed knowledge of this, in our organization who believes that they come from extraterrestrial sources. 88/

Dr. Hynek was the next to testify and in response to an accusation that he was an Air Force "puppet" on the subject, he read a statement "which has certainly not been dictated by the Air Force."

Admitting that during his 20 years of association with UFOs, the subject seemed "utterly ridiculous . . . like some fad or craze [that] would subside in a matter of months," Hynek announced that he had chosen 20 cases, still unidentified, for further study to illustrate that no one was hiding the fact that there were still unsolved cases. He also repeated a recommendation he had been making for 13 years that Project Blue Book could not study the reports as closely as was needed and that a civilian group should be appointed.

In questioning from the committee, Rep. Nedzi (D-Mich.) asked about sightings in other countries and when told the Air Force dealt with U.S. sightings

87/ U.S. Congress. House. Committee on Armed Services. Unidentified Flying Objects. Hearings, 89th Cong., 2nd Sess., Apr. 5, 1966. Washington, U.S. Govt. Print. Off., 1966. p. 5995.

88/ Ibid., p. 6005.

only and no one in the other countries was investigating UFO reports, he suggested that there be an exchange of ideas among U.S. and other scientists. The Chairman said an international effort would not broaden the basic data base and might degrade the quality of data, considering the difficulty encountered in getting details in this country.

In general, the Members of the committee expressed disbelief in extraterrestrial vehicles and confidence in the Air Force and Dr. Hynek. Rep. Hebert (D-La.) asked if Dr. Hynek had conferred with Ray Walston on the matter (Mr. Walston portrayed a Martian on a television show at that time.)

b. House Science and Astronautics Committee Hearings (1968)

Despite the reassurance given by the Armed Services Committee, the controversy over UFOs continued and in 1968 another set of hearings was conducted, this time by the House Science and Astronautics Committee. These proceedings were the opposite of the 1966 hearings in that not only were no Air Force witnesses called, but the other witnesses were not allowed to comment on Project Blue Book at all, since the committee did not feel Air Force activities came under their jurisdiction. 89/

Six men presented testimony and six others prepared statements for the record. Due to space limitations, only the oral testimony will be summarized below, although the other six statements are recommended to the reader, as important to a more complete understanding.

89/ U.S. Congress. House. Committee on Science and Astronautics. Symposium on Unidentified Flying Objects. Hearings, 90th Cong., 2nd Sess., July 29, 1968. Washington, U.S. Govt. Print. Off., 1968: p. 2.

B. ANIMAL MUTILATIONS

The flap of 1973 eventually died down, although some UFO reports continued to come to the attention of private organizations. In late 1974 and early 1975, the focus was on a series of cases that involved mutilation of animals. NICAP reported in its February UFO Investigator that:

For the past three months, [we have] been inundated with calls and letters of inquiries regarding reports of animals that have been mutilated in different parts of the country. . . . The prime target area of the mutilated animals centers around Meeker County, Minnesota.

Their report went on to explain that on December 1, 1974, a farmer in Meeker County reported that one of his calves had been mutilated. Investigators found that the calf's lips had been cut off from one inch above the nose to behind the rear of the left jaw bone. The tongue was removed and the jugular vein slit. Interestingly, only about one cup of blood was on the ground, indicating that someone had collected the rest. The edge of the left ear and the reproductive organs had also been removed. There was no sign of entry to or departure from the area, and a circular bare spot in the snow was discovered. This led some to conclude that UFOs were responsible, although NICAP expressed reservations about this explanation. They revealed that other such mutilation incidents had occurred in Dallas and in sections of California.

In May, NICAP followed up on the story by printing a letter by two men who investigated the matter further, one from NICAP and one from APRO. They found that the "circular bare spot" was not circular at all and "was in fact an irregularly shaped area caused by the snow being compacted by other cattle as they came to sniff the body." They concluded that the mutilation was part of

initiation rites for a satanic cult, whose members had been arrested by Federal authorities. This cult had moved through different areas of the country and was responsible for all the mutilation reports. 123/

C. INFORMATION OBTAINED THROUGH THE FREEDOM OF INFORMATION ACT

In 1977 and 1978, three organizations interested in UFOs obtained the release of about 3,000 UFO-related documents under the Freedom of Information Act from the FBI, CIA, Air Force, and Naval Intelligence. The organizations were Ground Saucer Watch, Citizens Against UFO Secrecy, and Fund for UFO Research. Approximately 300 pages of these documents were provided to CRS for examination by a representative of the Fund for UFO Research. CRS did not, however, verify the authenticity of these documents with the relevant agencies.

1. FBI

The FBI documents covered the time period from 1947 to about 1963. They consist of reports and memoranda about sightings, evaluations of persons reporting the sightings, and directives about procedures to be followed by agents in the field.

It appears from these documents that the FBI was interested in UFOs only from the perspective of its mandate to protect the country's internal security and only to a limited extent--it did not want to act as an agent for the Air Force and collect alleged UFO artifacts or to do all the field work. The FBI's involvement was limited to receiving sighting reports from its special agents and from the public.

123/ Cornett, Robert C. and Kevin D. Randle. Feedback, Readers Write-
Re: Cattle Mutilation in Minnesota. NICAP, UFO Investigator, May 1975: 4.

The following are excerpts from released FBI memoranda and documents:

. . .there are no War Department or Navy Department research projects presently being conducted which could in any way be tied up with the flying disks. (July 10, 1947--16 days after Kenneth Arnold's reported sighting)

. . . the Army is conducting no experimentation with anything which could possibly be mistaken for a flying disc. (August 19, 1947)

This 'flying saucer' situation is not all imaginary. . . .
Something is really flying around. (August 1947)

Several flying objects were observed. They had a mean calculated speed of 27,000 miles an hour. (January 31, 1949)

. . . flying discs are believed to be man-made. . . . It has also been determined that for approximately the past four years the USSR has been engaged in experimentation on an unknown type of flying disc. (March 25, 1949)

Since 1948, approximately 150 observations of aerial phenomena . . . have been recorded in the vicinity of [sensitive] installations in New Mexico. (August 23, 1950)

All the reports dealing with specific sightings of flying objects include similar information regarding the great speed of these objects and their ability to hover. The shapes and sizes of the sighted objects vary.

As the collection, investigation, and filing of reports about UFO sightings became assigned to the Air Force, 124/ the FBI transmitted to that agency the reports it received. Eventually, the FBI received fewer and fewer reports and finally terminated its involvement with UFOs.

124/ As noted in section V, the Air Force initiated Project Sign in 1948 and continued investigating UFO reports officially until 1969.

2. Air Force

The Air Force has a standard reply to any inquiries concerning reports about UFO sightings, as revealed in an unclassified communication dated November 12, 1975 which was released upon the Freedom of Information Act request:

On December 17, 1969 [after the publication of the Condon Report], the Air Force announced the termination of Project Blue Book, the program for the investigation of UFOs. Since then, no evidence has been presented to indicate further investigation by the Air Force is warranted. There are no plans for renewed Air Force involvement in this area.

In November 1975, this reply was used in connection with the numerous overflights and hoverings of UFOs above weapons storage areas and other sensitive locations at several Strategic Air Command bases. Since these UFOs could, or did, affect national security, reports about them were made in accordance with JANAP 146 or Air Force Manual 55-11 guidelines. Reports of these incidents from 1975 are among the released documents.

3. CIA

About 90 to 95 percent of the documents released by the CIA are merely transcripts or translations of reports about UFO sightings obtained from surveys of open, foreign press reports and broadcasts. The following is an excerpt from a released CIA memorandum dated December 2, 1952:

At this time, the reports of incidents convince us that there is something going on that must have immediate attention. . . . Sightings of unexplained objects at great altitudes and traveling at high speeds in the vicinity of major U.S. defense installations are of such nature that they are not attributable to natural phenomena or known types of aerial vehicles.

4. Naval Intelligence

The documents released by Naval Intelligence deal with UFO sighting reports submitted to it by Navy, or related, personnel. The speed of the sighted flying object from one of these reports was calculated to be about 6,700 miles per hour.

There are also some documents from U.S. military attaches and consular officials which deal with UFO sightings in foreign countries.

D. CARTER ADMINISTRATION ACTIVITIES

A few months after the Carter Administration took office, the White House became a focal point for a new wave of inquiries about UFOs--perhaps as a result of the release of several space-related movies and President Carter's campaign promise to remove the veil of government secrecy from the subject of UFOs. The White House press office requested assistance in this matter from Presidential Science Adviser Frank Press. In a letter dated July 21, 1977, Dr. Press recommended to NASA Administrator Robert A. Frosch that NASA become the focal point for all UFO inquiries and that it should set up a desk to which the White House could forward all the inquiries it received. He also recommended that a small panel of inquiry be formed by NASA to see if any new significant findings had come to light about UFOs since the publication of the Condon Report.

In a September 6, 1977 letter to Press, Frosch replied that NASA was responding to UFO-related inquiries with a form letter. (The form letter, Information Sheet FGM 76-6 of the Office of Public Affairs, stated that an extensive study about UFOs closed with the publication of the Condon Report. It summarized the conclusions of that report and advised where one might purchase a copy.

The form letter went on to say that "investigations are continuing under private auspices" and provided the names and addresses of two private organizations which investigate reported UFO sightings.)

Regarding the panel of inquiry, Frosch said that "Before committing to this, . . . we should assure ourselves that an inquiry is justified."

In a press report dated November 26, 1977, 125/ David Williamson, special assistant to the NASA Administrator, was quoted as not favoring "research on something that is not a measurable phenomenon" and in a letter dated December 21, 1977, Dr. Frosch told Dr. Press that NASA was prepared to "continue responding to public inquiries along the same lines as . . . in the past." Regarding further investigation of UFOs, because of the absence of tangible or physical evidence, "we have not been able to devise a sound scientific procedure for investigating these phenomena. [However,] we stand ready to [analyze] any bona fide physical evidence from credible sources." 126/

E. CURRENT AND RECENT SCIENTIFIC STUDIES

Michael A. Persinger of Laurentian University, Sudbury, Ontario, Canada has published several papers which correlate UFO reportings, tectonic strains, and the release of these strains or earthquakes.

In a 1976 article, Persinger theorized that subsurface geological formations which are under tectonic strains could generate piezoelectric effects just before or during fracturing, as stresses are released, or after unusually intense

125/ Carter Is Facing Rebuff on Reviving UFO Probe. Washington Post, Nov. 26, 1977: B5.

126/ Letter, dated Dec. 21, 1977, from Robert A. Frosch, NASA Administrator to Frank Press, Director, Office of Science and Technology Policy, Executive Office of the President.

VII. SUMMARY

Although little media attention has been paid to the subject of UFOs in recent years, the controversy still rages and excites nearly as much emotional response now as it did in 1947. After 21 years of investigating UFOs, the Air Force concluded that whatever was being seen was not hostile, nor a threat to the national security, and therefore needed no further inquiry. The population accepted this view for some time, although questions arose once again as more UFOs were reported, such as during the 1973 flap. Media coverage is still rare in anything but the tabloids and publications of UFO organizations, however.

What then is the future for UFOs? It seems most plausible that the situation will continue on as it has been. Methods have been proposed by different specialists to increase available "hard" data. These suggestions include use of a satellite surveillance system for noting any strange objects in the sky at the time of a "good" UFO report (Eugene Epstein, The Aerospace Corporation); increased study of physical trace evidence, especially soil sample analysis such as that used in the Delphos, Kansas case (Ted Philips, Center for UFO Studies); and correlating similarities in UFO cases from many countries over an extended period of time by use of a computer (Jacques Vall'ee, Institute for the Future). If any of these techniques can produce the data needed to prove, or disprove, the extraterrestrial hypothesis, then headway can certainly be made, however, past experience demonstrates that whatever one camp states is almost immediately challenged if not refuted by the other.



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or need help, call...**

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Geek Library: Possibility of Intelligent Life Elsewhere in the Universe

Our Geek Library selection is a 1977 federal report prepared for Congress' Committee on Science and Technology

By [Tom Merritt](#)
April 11, 2001

Here's the full title in all its glory:

Possibility of Intelligent Life Elsewhere in the Universe, *Report prepared for the Committee on Science and Technology U.S. House of Representatives*, October, 1977 (revised). Prepared for the committee on Science and Technology, US House of Representatives, 95th Congress, first Session US Library of Congress, Science Policy Research Division; 1977

Marcia S. Smith wrote this classic summation of the topic in 1975 and revised and lengthened it in 1977. In the report, Smith wrote a clear and comprehensive summation of all extraterrestrial research up to the date of the writing. Because she had to write in language that legislators could understand it serves as a great introduction for newbies in the SETI field.

It features the Carl Sagan's [formula](#) on the likelihood of intelligent life, that he revised from the original Drake's equation.

It also contains lots of cool illustrations, including one of the plate affixed to the Pioneer 10 spacecraft depicting humans and their location in the universe.

Another excellent element is an excerpt from the Smithsonian magazine article (October 1974) on animals in alien biospheres. Some of you may have seen these on exhibit at the Air and Space Museum in Washington.

You can't buy it in stores so you'll have to head down to your local Federal Depository Library and ask for it by name. The SuDoc number is DOC Y 4.Sci 2:95/0.

Calculation of Intelligent Civilizations

The very first meeting in modern times to discuss the possibility of extraterrestrial intelligence was held by the National Academy of Sciences in November 1961 at Green Bank, West Virginia... Eleven prominent scientists met... to discuss extraterrestrial intelligent life and interstellar communication....

The product of the meeting was a formula to determine the possibility of extraterrestrial intelligence. Each variable in the equation is subject to different qualifications, however, and five years after the meeting Dr. Carl Sagan came to a different conclusion from that of this meeting. The two results are compared below:

$$N = R_* f_p n_e f_i f_c L$$

N is the number of extant civilizations possessing interest and the capability for interstellar communication.

R_* is the mean rate of star formation averaged over the lifetime of the galaxy. The Green Bank (GB) group said this was the total number of stars in the galaxy divided by the lifetime of the galaxy. By their values this was

$$10^{10}/10^{10} \text{ or } 1$$

Sagan used 10^{11} as the total number of stars, so his value for R is

$$10^{11}/10^{10} \text{ or } 10$$

f_p is the fraction of stars with planetary systems. GB said the value for this would be either 0.4 or 0.5; Sagan said 1.

n_e is the mean number of planets in each planetary system with an environment favorable for the origin of life. Feeling that our sun was unexceptional in this regard for a star of its class, GB said between 1 and 5; Sagan uses 1.

f_l is the fraction of suitable planets on which life does develop. Agreeing that life on such planets would be inevitable, both use the value of unity, 1.

f_i is the fraction of life-bearing planets on which intelligence accompanied with manipulative ability appears. Here the issue of dolphins arises, for although they are considered by many to be intelligent beings, they have no manipulative ability, and therefore do not fit this equation. Using the same arguments to deduce their answers, GB and Sagan come to different conclusions: the former uses 1 and the latter 10^{-1} .

f_c is the fraction of planets on which an advanced technical civilization evolves. Both GB and Sagan adopt a 10^{-1} value for f_c .

L is the lifetime of the technical civilization and the most difficult variable to determine. (The L period of Earth just recently began with the development of the radio telescope, since only then did we become capable of communicating with other civilizations in space).

At Green Bank they considered the two extremes of a civilization destroying itself in less than 1,000 years, or overcoming its crises and lasting almost indefinitely, or more than 100 million years.

For the Green Bank group, then, the lower limit for N would be:

$$1 \times .4 \times 1 \times 1 \times 1 \times 1 \times .1 \times 1000 = 40$$

The upper limit would be

$$1 \times .5 \times 5 \times 1 \times 1 \times 1 \times .2 \times 100,000,000 = 50,000,000.$$

Sagan chooses the extremes of L less than 100 or greater than 10^8 , assuming an average of 10^7 . His lower limit for N is therefore:

$$10 \times 1 \times 1 \times 1 \times 1 \times 10^{-1} \times 10^2 = 10$$

His upper limit is:

$$10 \times 1 \times 1 \times 1 \times 1 \times 10^{-1} \times 10^{-1} \times 10^7 = 10^6$$

Excerpted from Possibility of Intelligent Life Elsewhere in the Universe, *Report prepared for the Committee on Science and Technology U.S. House of Representatives*, DOC Y 4.SCI 2:94-1-r, 1975. Pages 6-7.



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MARCIA S. SMITH

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NEVERMORE USED BOOKS

Author: Smith, Marcia S. and Dr. George Gatewood

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Publisher: Coles Publishing Co., Ltd., 1978

Catalogue: Science

Keywords: interplanetary travel

Description: Paperback, 5.5x8.25, 126 pp. Photos, graphs, and illustrations. Overall very good condition.

Book ID Number: 1458

Price: \$8.00

CLINTON AND BUSH ADMINISTRATION NATIONAL SPACE POLICIES: A COMPARATIVE ANALYSIS

By David P. Radzanowski and Marcia S. Smith, Science Policy Research Division. January 24, 1997. 45 pages. President Clinton released a National Space Policy September 19, 1996, covering civilian, military, and commercial space issues, as well as cross-cutting (intersectoral) issues. This is

the first overall National Space Policy since November 16, 1989; the Bush Administration subsequently issued several specific policies for aspects of space policy, and the Clinton Administration used this approach for policy issues that arose from 1993 to 1996. This report compares the September 16, 1996 and November 16, 1989 overall national space policies of the Clinton and Bush Administrations. Order No. 97-160 SPR.

MARS: THE SEARCH FOR LIFE

By Marcia S. Smith, Science Policy Research Division. September 11, 1996. 6 pages. The

possibility that scientists have discovered evidence of microbial life that existed on Mars 3.6 billion years ago has stimulated public and congressional interest in NASA's Mars exploration program. This report summarizes recent findings, concerns raised by skeptics, and past and current Mars exploration programs, and identifies congressional issues. Order No. 96-754 SPR.

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THE UFO ENIGMA

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Revised and Updated by
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Science Policy Research Division



June 20, 1983

VII. SUMMARY

Although little media attention has been paid to the subject of UFOs in recent years, the controversy still rages and excites nearly as much emotional response now as it did in 1947. After 21 years of investigating UFOs, the Air Force concluded that whatever was being seen was not hostile, nor a threat to the national security, and therefore needed no further inquiry. The population accepted this view for some time, although questions arose once again as more UFOs were reported, such as during the 1973 flap. Media coverage is still rare in anything but the tabloids and publications of UFO organizations, however.

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ABSTRACT

Unidentified flying objects (UFOs) have been a source of concern, anxiety, and ridicule for more than three decades in the United States, and for centuries on a global scale. The question in the case of UFOs is not whether there is other intelligent life in the universe, but whether it has visited Earth, and if not, then what accounts for the thousands of reports of strange lights and phenomena which seem to have no other explanation? Although the number of reports in the media about UFOs has dwindled in recent years, the film "Close Encounters of the Third Kind" rekindled interest in the UFO debate for a short time, and the movie "E.T. -- the Extraterrestrial" refocused attention on the possible existence of other intelligent life in the universe.

This report is an updated edition of the 1976 CRS study by the same title, and adds material on what has happened since the mid-1970's in terms of U.S. Government involvement in solving the UFO puzzle, and information that has been released under the Freedom of Information Act.