

STILL IN DEFAULT

POST - MILLENNIUM EDITION

By

Bruce S. Maccabee, Ph.D.

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[UPDATES TO 1998/2004 ARE PRESENTED IN SQUARE PARENTHESES]

ABSTRACT

For nearly 40 [more than 50] years, the science establishment has ignored the UFO problem, relegating it to the domain of "true believers and mental incompetents" (a.k.a. "kooks and nuts" [according to former editor John Howard of Applied Optics magazine]). Scientists have participated in a "self-cover-up" by refusing to look at the credible and well reported data. Furthermore, some of those few scientists who have studied UFO data have published explanations which are unconvincing or just plain wrong and have "gotten away with it" because most of the rest of the scientific community has not cared enough to analyze these explanations. The general rejection of the scientific validity of UFO sightings has made it difficult to publish analyses of good sightings [in refereed journals of establishment science]. Examples are presented of the scientific-self-cover-up involving erroneous explanations, refusal to look at the data, and rejection of papers for publication. How long will this situation last? Forty [fifty] years is long enough [too long].

SCIENCE IN DEFAULT

"No scientific investigation of the UFO problem has been carried out during the entire twenty-two year period between the first extensive wave of sightings of unidentified flying objects in the summer of 1947 and the convening of this symposium."

The above statement was made by the late Dr. James E. McDonald at the UFO symposium held by the American Association of Science (AAAS) in 1969. (Reference 1). Even now 17 [over 33] years later it is still true.

WHY?

[Note: McDonald was Professor of Atmospheric Physics at the University of Arizona. He was an expert in atmospheric physics. He was one of the first scientists to propose cloud seeding to cause rain. He was the first to suggest that the exhaust from a fleet of supersonic transport aircraft could destroy the ozone layer in a manner not unlike the more recent "hole" creation caused by chlorofluorocarbons. He became interested in the flying saucer phenomenon in the late 1950's and became an active investigator in 1966. For the next several years he traveled around the country trying to enlist the help of other scientists. Despondent over his marital life and possibly over the effect of his saucer investigations on his professional life, he committed suicide in 1971. McDonald's story is presented in the book *FIRESTORM* by Anne Druffel.]

The first wave of sightings in the USA occurred in June and July, 1947. As a result of a large number of sightings, many by Army Air Forces personnel [the Air Force was a branch of the Army until September, 1947], the Army Air Forces began an investigation of the sightings. In early 1948 the investigation was formalized as Project Sign (1948-1949). In the following years, as the sightings continued, the Air Force changed the name of the UFO project to Grudge (1949-1952) and then Blue Book (1953 - 1969).

The Air Force tried to convince the general public that it was coping with the UFO problem by presenting the following statements as facts:

- 1. No sighting ever investigated threatened the security of the United States.**
- 2. No sighting provided convincing evidence of technological developments "beyond the range of present day scientific knowledge."**
- 3. No sighting provided evidence that extraterrestrial vehicles had been sighted.**

To support these claims Air Force spokesmen pointed to the large fraction of the sightings which they *claimed* to have explained (90% or so). They then stated, without proof, that with more information about the individual sightings even the unexplained sightings would have been explained. Thus to a person who had no access to the "raw data" (witness interviews, other pertinent information and analyses of the sightings) it would appear that, at least in principle, all

sightings could be explained. Specifically, the Air Force stated that all UFO sightings resulted from honest misperceptions or misinterpretations of conventional phenomena, from psychological aberrations or from hoaxes. (The Air Force acknowledged that the percentage of known hoaxes was only several percent.)

The scientific community generally agreed with the Air Force statements that there was nothing of great importance underlying UFO sightings for two basic reasons:

1. The few qualified scientists who were (or who claimed that they were) acquainted with the UFO data did not publicly dispute the Air Force. [Note: this applied in particular to Dr. J. Allen Hynek, Northwestern University astronomer who was the Air Force's expert on astronomy and consulted on all UFO sightings. Hynek did not publicly dispute the Air Force until after 1966, and then only mildly. By that time the "tradition" had been firmly established that UFO sightings were not caused by unknown phenomena and so were not of interest to the scientific community. After Project Blue Book closed in early 1970 Hynek became more vocal. He published his first book on the UFO subject, *The UFO Experience* in 1972. In that book he criticized the Air Force. He founded the Center for UFO Studies in 1973 and continued his studies of the UFO phenomenon until he died in 1986. It appeared to me, from discussions with him, that he believed there definitely was some unusual, unrecognized phenomenon behind the UFO reports although he was not sure of the nature of that phenomenon. As he told me when he spent a night at my house in 1980, "I live every day as if this weren't real."]

2. The conclusion that UFO sightings arose from misperceptions, delusions and hoaxes was acceptable to scientists because there was no theoretical justification for believing that UFO sightings could be caused by anything truly bizarre, such as unknown natural (unintelligent) phenomena or extraterrestrial visitors [for example, there is no universally accepted concept of such visitation because other planets are too far away, "they can't get here from there," etc.].

Although most of the scientific community was convinced by the Air Force's statements, a small number of scientists and a considerably larger number of civilians (especially witnesses) did not agree with the Air Force. They founded numerous civilian organizations such as the Aerial Phenomena Research Organization, (APRO, 1952), Civilian Saucer Intelligence (CSI, 1953), the National Investigations Committee on Aerial Phenomena (NICAP, 1956), [the Mutual UFO Network (MUFON, 1969) and the Fund for UFO Research (FUFOR, 1979)], [these were/are organizations in the USA; numerous organizations were founded in other countries as well] with the intent to study the UFO problem themselves. They collected UFO reports and investigated sightings. NICAP was also interested in forcing the Air Force to admit that there really was a problem [i.e., an unexplained phenomenon] and then to release the sighting data to interested civilians.

NICAP and the other groups gained press attention whenever there was a large concentration or flap of sightings. However, they were not able to pressure the Air Force into changing its ways. Nor were they able to convince the scientific community that UFO sightings were worthy of investigation,

Starting in the late 1950's, NICAP tried to persuade Congress to take some action. In 1964 NICAP mailed a copy of *The UFO Evidence* to each member of Congress. [See Reference 2. Note: The *Evidence* included selected sightings up through 1964. A second volume including selected sightings since 1964 has recently been published by Richard Hall, who edited the first version.] Although

individual Representatives and Senators complimented NICAP on its effort, Congress as a whole did not react. However, NICAP had set the stage for future action and, when a flap of sightings began in the summer of 1965 and continued through the following winter, Congress did act.

In April 1966, the House of Representatives Armed Services Committee called upon the Air Force to conduct an independent evaluation of its UFO project. The ultimate outcome of this Congressional pressure was the independent study carried out over a 2-year period (1966 -1968) at the University of Colorado.

In the final report of this project, its director, Dr. Edward.U. Condon, claimed that no useful scientific information had been gained during the 21 years that the Air Force had studied UFO reports and that, in his opinion, it was unlikely that further study would advance science, (Reference 3). Condon recommended that the Air Force terminate Project Blue Book, and, on December 17, 1969, the Air Force announced that closure was coming soon. It came on January 30, 1970.

Sic Transit Gloria Blue Book

During the latter half of December (in fact, only 10 days after the end of Project Blue Book) the AAAS held a symposium on UFOs. The symposium was organized by Dr. Philip Morrison, Dr. Walter Orr Roberts, Dr. Carl Sagan, and Dr. Thornton Page. In his opening address Dr. Roberts indicated that the symposium had been organized (in spite of stiff resistance from older scientists in the AAAS) because "the public understanding of science is at stake."

Dr. Roberts hoped that the symposium could help to delineate "the borders between scientific and non-scientific discussion" related to UFOs. He further hoped that "the discussion would be well-balanced and provide that self-correcting process required for the advancement of science." (Reference 1) Considering that the Air Force had announced the impending closure of Project Blue Book just a few days earlier, he and many of the others present probably felt that the symposium was essentially a "post mortem" on the subject of UFOs.

One speaker did not consider the symposium to be a post-mortem, but rather as an opportunity to point out where scientists had gone wrong in ignoring the subject. For him it was an opportunity to break with the past and to start rethinking the UFO problem. He argued that because scientists had not-treated UFO reports scientifically, no final conclusion could yet be presented. That scientist was Dr. James McDonald and he entitled his paper

"Science in Default."

I believe that if he were here today, he would state with clear conviction that science is still in default, hence the title of this paper: "Still In Default". The reason I believe he would do this is that many of the problems with UFO investigations and sighting analyses that McDonald identified 20 years ago [now about 35 years ago!] have continued to exist to the present day.

Furthermore , I believe that McDonald would be dumbfounded by the fact that the large amount of UFO-related information that has become available in the years since the AAAS symposium has caused no more than a slight ripple in the scientific community. Here is a very short list of government information available to the public which was not available in 1969:

1. The files of Project Blue Book (Before the release a person willing to travel to Wright-Patterson AFB in Dayton, Ohio, would have been allowed to see unclassified sighting reports.) [In 1975 they were declassified and released to the National Archives and can be seen there on microfilm. A person can also buy the microfilm for personal use. It is estimated that there are over 100,000 pages of material in the Blue Book file.]

2. The UFO files of the Air Force Office of Special Investigation (AFOSI); these were not available to anyone without proper clearance before they were released along with the Blue Book file itself in 1975. Both files are now on microfilm at the National Archives and these two files, taken together, constitute "the Blue Book" microfilm file that corresponds to well over 100,000 pages of material on some 90 microfilm rolls.

3. The UFO files of the FBI, released in 1977 as a result of a Freedom of Information Act (FOIA) request filed by this author. [In early 1998 the 1600 pages of FOIA documents were placed on the FBI Web site: <http://foia.fbi.gov/foiaindex/ufo.htm>.]

4. CIA files, mostly released in 1978 under FOIA requests [in response to a lawsuit filed by a UFO organization that existed in the 1970's called Ground Saucer Watch (GSW)].

[NOTE: In 1997 the CIA published a history of its UFO related activities. This history does not provide the valuable UFO information contained within the documents, but does show that in 1952 the CIA carried out its own investigation of Project Blue Book activities. See <http://www.odci.gov/csi/studies/97unclass/ufo.html>. See also my book, *THE UFO FBI CONNECTION* for a history of CIA ufo-related activities.

The history also shows that some CIA staff believed that the high altitude spy planes - the U-2 and its successors- caused up to 50% of the UFO sightings recorded by Blue Book. According to Brad Sparks, Hector Quintanilla, when he became director of Blue Book in 1963, advanced this theory and it evidently convinced the CIA.

However, my analysis of the flow rate of sighting reports (number of sightings per month) following the onset of U2 flights in August 1955 shows that this was far from the truth. See http://www.brumac.8k.com/cia_explanation.html]

5. State Department files, via FOIA request, with occasional releases after 1978.

6. Army files via FOIA requests, in 1984.

7. Navy files via FOIA requests, with occasional releases over the last 10 years.

8. Coast Guard files, via FOIA requests, with occasional releases over the last 10 years.

9. The Canadian National Research Council files, via requests by Canadian citizens; released in 1984.

10. The joint Air Force-Navy formerly Top Secret intelligence document that was released in 1985, (Reference 4)

11. The classified case file on Senator Richard Russell's 1955 sighting in Russia, released in 1985. (Russell was, the Chairman of the Senate Armed Services Committee for many years.)

[12. The files of the Air Force Directorate of Intelligence and the Science Advisory Board, released between 1985 and 1997].

[13. Testimony from witnesses who have revealed what they know about government projects over the last 33 years.]

There have been various estimates of the number of pages of Government documents released in recent years that were not contained within the Project Blue Book/AFOSI file. The number released since 1969 probably exceeds 4,000 [5,000].

New information not available in 1969 also includes numerous interesting sightings from throughout the world in the last 17 [34]years, examples of which are listed below.. [I have carefully studied the available information and personally investigated sightings marked (**)]. Numerous other phenomena also have been reported, including the reports of circular and complex traces in fields of corn and barley in England over the last several [20] years ["agriglyphs"], some of which may bear some relationship to the UFO phenomenon. [Circular "landing traces" and "saucer nests" were occasionally reported during the years before "crop circles" or agriglyphs became well known.] There is also important new information on old cases such as the Roswell material retrieval case. [Nearly a dozen books about the Roswell incident and two Air Force documents have been published in the last 34 years, beginning with THE ROSWELL INCIDENT by Charles Berlitz and Wm. Moore, published in 1980.]

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SOME NEW SIGHTINGS SINCE THE 1969 AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE SYMPOSIUM

(References available from MUFON and other sources)

- 1. Delphos, Kansas, 1971 landing trace case
- 2. Fall, 1973 sighting wave, especially Coyne/helicopter sighting and Hickson/Parker abduction.

3. **October-November, 1975 Strategic Air Command (SAC base sightings).
4. November, 1975 Walton abduction case (same time frame as SAC base sightings).
5. **September, 1976 Iranian jet case [American jets temporarily disabled]
6. October, 1978 Australian pilot (Valentich) aircraft disappearance.
7. November, 1978 Kuwait oilfield landing (reported by State Department).
8. **December, 1978 New Zealand pilots/multiple witness, radar-visual-film sightings See [CLICK HERE](#) and [HERE](#)
9. Warren, Minnesota, August 1979 police car (Officer Johnson) collision with a rapidly moving bright light
10. **August 1980 Kirtland AFB, New Mexico, UFO landing case in restricted area.
11. December 1980 Cash-Landrum injury case near Houston, Texas.
12. USAF-RAF Rendlesham Forest landing case in England (nearly coincident in time with the Cash-Landrum case.) [See *LEFT AT EAST GATE* by Warren and Robins, published in 1997 and *YOU CAN'T TELL THE PEOPLE* by Georgina Bruni, published in 2001]
- [13. 1981 Trans-En-Provence, France, investigated by GEPAN -the official French UFO investigation group - which included unexplainable effects on plants]
14. **December, 1981 "Christmas Tree Lights" photographic case in Connecticut.
- [15. 1983-84, sightings in Westchester County, New York]
- [16. **December, 1986 Japan Air Lines (JAL1628) pilot sighting over Alaska]
- [17. **November, 1987 - July, 1988 sighting wave in Gulf Breeze, Florida and vicinity]
- [18. Belgian sighting wave 1989-1990 which included Belgian Air Force chasing UFOs]
- [19. Russian sightings 1989-1990 which included a military sighting with a hundred military witnesses two weeks before the Belgian Jet case mentioned in #18]
- [20. **November, 1990 - July, 1992 nearly continuous sightings in Gulf Breeze, Florida]
- [21. **September 16, 1991 sighting by this author and 30 others of a ring of lights that appeared in the sky over Gulf Breeze (see **UFOS ARE REAL, HERE'S THE PROOF** by Ed Walters and Bruce Maccabee, Avon, 1997)]
- [22. **Numerous sightings by witnesses in the Gulf Breeze area and the vicinity of Georgia, Alabama and Mississippi, 1993 - 1997]
- [23. **Phoenix, Arizona, Feb. 1995],
- [24. **Mexican Air Force radar UFO, March 2004]

[This list does not include representative sightings from other countries such as Italy, Britain, Spain, Germany, Brazil, Australia, Chile, Russia, India, etc. which have been reported over the last 35 years. One might hazard a guess that ten thousand or more sightings have been recorded since 1968. Thousands more have not been recorded. Also missing from this list are representatives of the hundreds of abduction cases reported and investigated over the last 35 years.]

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There have also been important non-sighting events such as the creation of an investigation group, GEPAN, by the French government in 1977 and the conclusion by that group that there were several cases it couldn't explain [in the 1980's the Chinese government and Russian governments established UFO investigating groups; in 1997 Chile did the same]. Other non-sightings events include the lawsuits against the CIA [1978] and NSA [1981]and the recent "discovery" that there are numerous Abduction/Examination/Release cases. [Several hundred abduction cases have been thoroughly investigated and hundreds more have been discovered since 1986.] Some of the reported abductions appear to be single events in the lives of witnesses and some appear to be repeats of earlier abductions of the same witnesses. Finally, there are the results of psychological studies of some of these people (which failed to turn up any psychological cause for the reports). (See references 5 and 6)

The release of the Project Blue Book case files and of other Government information is important because now civilian scientists can use the "raw data" to analyze the explanations published by the Air Force and by skeptical scientists in years past. This reanalysis can help us to determine whether or not the Air Force was correct in claiming that all sightings can be explained, With the "raw data," scientists can make up their own minds rather than having to rely upon the opinions of "experts."

Unfortunately, although the sighting information is now available, it has been largely ignored. There has been no reevaluation of the situation by the scientific community, nor is there any indication that a reevaluation is likely to occur. There is not even an indication that a reevaluation would be welcomed. Evidently there is a general feeling that the UFO problem" was put to sleep long ago. [This is still the situation in 2004!]

Thus, in my opinion, science is still in default because scientists have failed to come to grips with the new information and have not even treated the old information scientifically. An example of the failure to treat the old information scientifically is the tacit acceptance of explanations of early sightings such as were put forth by the late Dr. Donald Menzel, who "explained" sightings in terms of physically improbable or impossible atmospheric phenomena. More recent sightings have been "explained" by the modern-day vocal skeptics who don't have the scientific background of Dr. Menzel. Yet, they receive the tacit support of qualified scientists, apparently because the scientists have not taken the time to look carefully themselves.

STILL IN DEFAULT

In order to illustrate what I mean by "science in default" I will discuss some early sightings and the explanations which were given. Although in principle these sightings could have been discussed in science journals many years ago (as many as 30 [50] years ago!), in practice they were not because most of the raw sighting data were not generally available and because the journals generally refused to publish what little data there were available. Unfortunately, journals are still reluctant to publish UFO material. To

illustrate this reluctance I will discuss the results of my own attempts in recent years [during the 1980's] to publish analyses of UFO sightings in science journals. I have been very interested, even fascinated, at the extent to which some scientists have gone to explain UFO sightings. My study of these explanations has made me *skeptical of the skeptics.* Perhaps you will understand my skepticism after you read the following examples. **"Science is not always what scientists do."** (Reference 7)

The first widely reported sighting is also the one which has "collected" a large number of explanations. I refer, of course, to Kenneth Arnold's sighting of June 24, 1947. There were earlier sightings, including several by meteorologists in Richmond, Va (Minczewski and Baron, April 1947). However, these have been ignored in favor of the more "popular" Arnold sighting.

KENNETH ARNOLD SIGHTING: Arnold reported that in the middle of the afternoon (3 p.m.) he was flying a small plane near Mineral, Washington, in search of a crashed military transport plane just before his sighting. (Reference 8) He had given up the search a few minutes before 3 p.m., had climbed to about 9,200 ft, and had started to head almost due east toward Yakima when his attention was attracted by a flash of light on his plane. He immediately started looking around, thinking that some "hot shot" Air Force pilots in a fast military aircraft had just flown dangerously close to his airplane. He did see a large airplane at some distance to the left and behind him, but then he noticed that flashes were coming repeatedly from some objects flying southward toward Mt. Rainier, which was just north of due east of his position.

He watched the flashing objects closely and, as they flew past Mt, Rainier, he determined from their silhouettes against the snow that they had a generally crescent shape. The flashing was caused by sunlight reflections as the objects tilted back and forth, There were nine of these objects which passed Mt. Rainier at an altitude he estimated at 9,500 ft. (Mt. Rainier is about 14,400 ft. high, so they were considerably below its peak.) After they passed Mt, Rainier they continued southward "down the hogback" chain of mountains that runs from Rainier to Mt. Adams.

According to Arnold he could tell where the flight path was because some of the mountain peaks were closer and some were farther than the objects (they traveled "in and out of the mountain peaks"). At the time of the sighting Arnold was a couple of miles east of Mineral so the mountain peaks, and therefore the objects, were about 20 miles east of him. He said that he could see them flashing even after they passed Mt. Adams and he estimated that he had the objects in sight for a total of 3 minutes.

From his subsequent statements about the sighting, it appears that Arnold first thought that he was looking at some fast-moving new military jet aircraft even though he could see no wings, engines, tails, or exhaust trail. As they passed Mt. Rainier he decided to time their flight. Using the second hand on his dashboard clock he determined that it took about 102 seconds for the chain of objects to fly from Mt. Rainier past Mt. Adams, a distance of about 47 miles. He later estimated the speed at about 1,600 mph and then, to be conservative, reduced it to 1,200 mph. This is about twice the speed of jets of the day.

Arnold was impressed and told some people at the airport when he landed at Yakima, Washington. He subsequently took off to fly to Pendleton, Oregon, and there he met interested people and reporters who had heard of his sighting from the people at the Yakima airport. In describing the way the objects flew Arnold said they tipped back and forth like saucers skipped across the water. With

typical journalistic license, then, the newspapers described the objects he saw as "flying saucers."

Explanations were numerous and immediate. Although the possibility that Arnold's story was a hoax was not overlooked, most of the explanations assumed that he had seen something but that he hadn't realized what it was (i.e., the prototype "misidentification" case). The explanations were basically of two types: "quirks of eyesight" such as the inability of the eye to resolve objects at great distances (Howard Blakeslee, Science writer for the Associated Press, July 6, 1947), and various effects caused by atmospheric phenomena (e.g., mirages, clouds, "ice" meteors). Rather than discuss all of the explanations I will concentrate only on those proposed by Dr. J. Allen Hynek and Dr. Donald Menzel. The reason for concentrating on these is that they played a role in the Air Force's decision as to what Arnold really saw, and because they have been published in books and therefore are still mentioned as possible explanations for the Arnold sighting.

Initially the (Army) Air Force considered the sighting to be unexplainable. Then in 1948, as part of his work for Project Sign, Hynek analyzed the sighting. Hynek noted that Arnold had given an estimated size of roughly 50 ft. and had claimed that they were about 20 miles away. Yet he had been able to see their overall shape and had even been able to see the objects, as thin dark lines, when they turned edge-on to his line of sight. Arnold had estimated that the objects were about 20 times longer than they were wide. Hynek argued that if they were about 50 ft. long, 20 miles away and visible edge-on, then there was an internal inconsistency in Arnold's report because the eye cannot see that well.

Specifically, he referred to the "classic" limit of visual acuity of the eye (about 3 minutes of arc) would mean that the objects either were much longer than Arnold's estimate (Hynek estimated 2,000 ft. for Arnold to see the amount of detail he reported) or else they were much closer than Arnold had estimated. Hynek calculated that if the objects had actually been about 400 ft. long, the maximal size of an aircraft at that time, they would have been only about 6 miles away. Furthermore, had the objects been only 6 miles away their speed would have been only about 400 mph, comparable to normal aircraft speeds.

Hynek therefore concluded that "in view of the above (calculations) it appears probable" that the objects were "some sort of known aircraft." The Air Force analysts read Hynek's analysis and concluded that "...the entire report is replete with inconsistencies" and "...cannot bear even superficial examination, therefore must be disregarded" (from the Project Grudge report).

Hynek's conclusion was logical if Arnold really didn't know how far the objects were from him. However, Arnold claimed that he did know, and he even explained how he knew (the objects flew in and out of the mountain peaks), but Hynek, for some reason, did not take this into account. Had Hynek used the distance measurement rather than Arnold's size estimate he would have discovered that the objects were actually very large. [Note: a very complete analysis of Arnold's sighting has been published in the Proceedings of the International Conference of the Mutual UFO Network, 1997. In that much longer paper I point out that Arnold compared the apparent size of the UFO to the spacing between engines on DC-4 aircraft - 117 ft wingspan, 94 ft long, 23 ft fuselage height - which he could see far to his left, about 15 miles away. The point is that since Arnold could see the engines on the aircraft at 15 miles - or even if it were only at 10 miles - then he had better than average visual acuity, since the engines were about 60 ft apart. Because the UFOs were farther away than the airplane the estimated size of the UFOs would be 80 - 120 feet.]

About 4 years later Donald Menzel mounted his first "attack" on the same sighting. Menzel's first UFO book indicates that he had read the Air Force file on the case and that he did not accept Hynek's explanation. (Reference 9) Instead, Menzel acknowledged that the distance was about 20 to 25 miles away and accepted the consequence that the objects were large. However, Menzel's description of the sighting left out a very important detail: the measured time it took for the objects to travel from Mt. Rainier to Mt. Adams. Menzel wrote in his book that Arnold watched the objects for about 3 minutes. Then Menzel wrote as follows: "He clocked the speed at about 1,200 miles an hour, although this figure seems inconsistent with the length of time that he estimated them to be in view. From his previous statement they could scarcely have traveled more than 25 miles during the three minutes that he watched. This gives about 500 miles an hour, which is still a figure large enough to be startling."

The reader of Menzel's book would not know that Arnold had timed the flight over a known path and therefore had a good reason to estimate a high speed, (Note: The actual speed was about 1,700 mph -- 102 seconds to fly 47 miles --, but Arnold, to avoid overestimating the speed in his public statements, had arbitrarily reduced the calculated figure to 1,200 mph.)

After presenting his version of the sighting and Hynek's analysis of it, Menzel stated: "Although what Arnold saw has remained a mystery until this day, I simply cannot understand why the simplest and most obvious explanation of all has been overlooked." He then went on to suggest that Arnold saw "billowing blasts of snow ballooning up from the tops of ridges." According to Menzel, "These rapidly shifting, tilting clouds of snow would reflect the sun like a mirror. And the rocking surfaces would make the chain sweep along something like a wave, with only a momentary reflection from each crest."

This is an "ingenious" explanation which might convince someone who is impressed by Menzel's scientific credentials and knows little or nothing about atmospheric optics. It is wrong because snow clouds do not reflect the sun specularly "like a mirror," but rather they provide a diffuse reflection. Such a cloud could be bright, but typically not more than 10 times brighter than the surrounding sky, whereas a mirror reflection of the sun from a large metallic surface (for example) could be hundreds or thousands of times brighter than the surrounding sky.

Furthermore, even the brightest snow clouds would not appear particularly bright from a distance of 20 miles or so, especially to an observer looking east in the broad daylight with the sun slightly west of overhead. Moreover, even if there were rather brightly reflecting blasts of snow, there are no 1,700 miles an hour (or even 500 miles an hour) winds to propel the snow clouds from one mountain peak to another at the high speed measured by Arnold. And finally, since Arnold flew within several miles of Mt. Rainier within minutes of his sighting, one would think that he would have realized that the objects were merely windblown clouds of snow.

Perhaps Menzel was not completely satisfied with this explanation because he listed "another possibility." He suggested that light was reflected from a dust or haze layer which, according to Menzel, can "reflect the sun in almost mirror fashion." According to Menzel, in the vicinity of the mountain peaks the presumed layer would be distorted by winds and perhaps some condensation would occur creating cloud crystals.

Unfortunately for this theory an atmospheric layer does not form where the air is moving violently. To form a layer requires quiet conditions. Thus, if there had been such a layer, and if it had caused any reflections at all (highly unlikely occurrence under the conditions of the sighting which required the

sunlight to be reflected through an angle of more than 90 deg), the reflections would have been substantially steady. Again, there are no winds with a high enough speed to transport reflecting portions of a layer (which couldn't exist in the wind anyway!) at a speed of 1,700 mph. Finally, it again seems unlikely that Arnold would have failed to eventually realize that he was merely watching a meteorological phenomenon.

Ten years after his first book on UFOs, Menzel wrote a second one (with Lyle Boyd). (Reference 10) Again he tackled the Arnold sighting. This time he proposed three explanations: the "objects" were mountain top mirages," or they were "orographic clouds," or they were "wave clouds in rapid motion." The mirage explanation was not Menzel's idea: it had already been accepted as "the official" explanation by the Air Force (Project Grudge) which evidently had rejected Hynek's explanation.

In proposing the mirage hypothesis he (and the Air Force before him) overlooked two important factors: (a) a mountain top mirage obeys the physical requirement of a superior mirage [which appears above the object being "miraged", hence the term "superior"] which is this: the observer has to be at an altitude such that the angular elevation between himself and the mountain top is much less than a degree and (b) a mountain top mirage stays over the mountain top. Fact (a) rules out the mirage explanation by itself because, according to Arnold, he was at an altitude of about 9,200 ft. at the time that the objects flew past Mt. Rainier so the angular elevation from his position to the top of Mt. Rainier (14,400 ft., 20 miles away) was more than 2 1/2 degrees, far too great for a mirage. [In other words, Arnold was too low in altitude to see a mirage of the top of Mt. Rainier.]

Arnold claimed that the objects flew past Mt. Rainier at an altitude about 5,000 ft. below the peak. This altitude difference rejects the standard superior mirage that appears above the peak (and is also inconsistent with an inferior mirage that might appear at an angle much less than one degree below the peak; an inferior mirage in this case would actually be a mirage of the sky appearing slightly below the mountain peak).

Factor (b) conflicts with the mirage explanation for Arnold's sighting because Arnold reported that the objects were visible between the mountain peaks, not just over the mountain peaks. Moreover, the objects had a considerable lateral motion, unlike mountain-top mirages which stay over the tops of the mountains.

Menzel also suggested that perhaps Arnold saw orographic clouds, which can assume saucer shapes and often form in the lees of mountain tops (downwind from the top) when a wind is blowing. These clouds would, of course, be large but, as Menzel notes in his book they "appear to stand more or less motionless." The lack of motion of such clouds, among other-things, rules them out.

Menzel's third suggestion, wave clouds in motion, is comparable to the "billowing blasts" of snow explanation in his first book except this time he is proposing clouds of water vapor rather than snow. The same arguments against his hypothesis would apply. Again, one wonders how Arnold could have failed to realize that the objects were merely clouds as he flew closer to the mountain tops on his way east.

Menzel tackled Arnold's sighting for the third and last time in his last UFO book, published after his death in 1973. (Reference 11) This time he suggested that Arnold saw the reflection off water drops on the windshield of his airplane. (This suggestion was based on Menzel's own experience of seeing water drops on the outside of an aircraft window and at first thinking that they

were large shiny objects at a great distance.) This explanation completely overlooks numerous details of the sighting including the following: according to Arnold's report to the Air Force, which Menzel had read many years earlier, he turned his plane sideways, opened his window, and then took off his glasses to be sure that he was not seeing some unusual reflection from a glass surface. (Anyone want to propose water drops on his eyeballs?)

It appears to me that each of the seven explanations just given (one by Hynek and six by Menzel) is completely erroneous. The fact that two experienced scientists would propose such explanations in a straightforward way (i.e., neither Hynek nor Menzel give the slightest hint that they thought their explanations were jokes) and the fact that their explanations were not publicly disputed by other scientists says a lot about the "UFO situation." The "situation" is such that the UFO phenomenon is considered to be a trivial scientific problem (there is "nothing to be gained" by studying UFO reports, according to Condon) and therefore any explanation [no matter how ridiculous] is acceptable to the science community. Had Menzel published his explanations in a science journal, there might have been a chance to criticize it in full view of the science community. However, since his explanations were published in books there was no such opportunity.

A review of Menzel's explanations of the Arnold sighting shows that Menzel was comfortable with leaving out information that might conflict with his explanations. This, of course, is bad scientific technique. Even worse, however, would be deliberate distortion of the sighting data to make it fit an explanation. In general it would be difficult to prove that a deliberate distortion occurred. But, in the case of the sighting by Charles B. Moore and four Navy trainees it seems to me that Menzel did deliberately distort the sighting information to assure that the reader would have no reason to question his explanation.

[In the 1990's two more explanations were proposed: meteors and pelicans. Neither of these is consistent with the sighting information.]

CHARLES B. MOORE SIGHTING: According to Mr. Moore's official report as found in the Blue Book file, at about 10:30 a.m., April 24, 1949, Moore and the Navy personnel were tracking a balloon that they had launched about 10 minutes earlier near Arrey, New Mexico. At the beginning of the sighting one of the Navy men was using the theodolite to track the balloon which was at an angular elevation of about 45 degrees and an azimuth of about 210 degrees. Moore, watching with the naked eye, observed a rapidly moving object which was initially in the same general direction as the balloon (in fact, he initially mistook it for the balloon).

He quickly took over the theodolite from the Navy trainee and then tracked the object with the theodolite. Its flight path took the object very close to the direction of the sun (127 deg azimuth and 60 deg elevation) and then to the north (so that the sighting line rotated clockwise about the observers looking upward from the ground). The final azimuth and elevation as it disappeared in the north-northeast were, respectively, about 20 deg and 29 deg.

In the last seconds before it faded from view in the distance its angular elevation increased from a minimum value of about 25 deg to its final elevation of about 29 deg [it was climbing as it departed!] The sighting lasted about 60 seconds. According to Moore, through the theodolite the object looked like a whitish ellipsoid with a "2-1/2 to 1 slenderness ratio." Its angular size was about 0.020 deg which corresponds to 34 ft. at an altitude of 100,000 ft. or 17 ft. at an altitude of 50,000 ft., etc. By plotting the directions given above on polar graph paper one finds that the azimuth changed by about 190 deg. When

the initial and final elevation angles are considered along with the azimuth angles, one finds that the (central, or minimum) angle between the initial and final sighting directions was about 120 deg.

All of this information (and more) was available to Menzel in the report which Moore filed with the Navy Special Devices`Center which sponsored the Skyhook balloon experiments. (Copies of the report turned up in the Air Force file and also in the CIA file on UFO reports.) Menzel's version of this sighting is presented verbatim in Appendix 1 of this paper. As can be seen by reading Appendix 1, a reader of Menzel's version without access to the original report, might conclude that the object had initially appeared to be a bit higher than the balloon, had dropped straight downward or nearly straight downward over a small angle for close to a minute, and then had moved slightly off to one side and suddenly upward by a small angle. The reader would not know the exact angles involved, nor would he know the value of the largest angle between the sighting line to the balloon and the sighting line to the object (about 120 deg).

Furthermore, Menzel included with his description a diagram which was supposed to represent the sighting. It shows the observer looking upward at the balloon and the "object" at a small angle below the balloon. This diagram is obviously intended to support Menzel's claim that what the observers saw was a mirage of the balloon caused by a sort of bubble in the atmosphere created by the balloon as it traveled upward through a temperature inversion layer. (Such an occurrence, as depicted by Menzel and described semi-quantitatively in the Appendix of his book, is highly unlikely or impossible.)

Menzel was well aware that a mirage cannot appear at a large angle away from the object which is the "source" of the mirage. In fact, in the appendix of his book he presented his theory and calculated that the angle between the balloon and its mirage would be no greater than 1/4 of a degree. Thus Menzel's own calculation ruled out his explanation if Moore's angle measurements were anywhere near correct. Since there is no reason to doubt Moore's angle measurements (Menzel's theory would require that the measurements be in error by about a hundred degrees!), it must be that Menzel's explanation was wrong.

It is important to note that an intelligent person, even one with no knowledge of atmospheric physics, could have discovered the error in Menzel's explanation if Menzel had included the factual data from the sighting in his book. Of course, it is possible that Menzel himself didn't understand the conflict between the data and his calculation, but this possibility seems remote considering his background in science. It seems more likely to me that Menzel intentionally left out the numerical data (the sighting angles) and deliberately distorted the description of the sighting (making it appear to the reader as if the object only dropped downward a small amount and then rose upward a small amount) so that the reader would have no reason to doubt his explanation.

His explanation probably would be accepted by a person who already had a skeptical attitude. Such a person would find his skeptical opinion strengthened by Menzel's explanation of what was one of the most credible of the early sightings. By the standards often applied to "UFO believers" by the science community, that person would be considered "gullible." If, after reading the above discussion, that person still felt that Menzel's presentation was a fair, unbiased, non-fraudulent, scientific treatment of a sighting made by credible, serious observers, then perhaps that person would like to buy some of the land I own on the moon...cheap.

[Note added in 1998][In 1986, I wrote to Dr. Moore to ask his opinion of Menzel's explanation. He responded as follows in December of that year: "Although I had met Donald Menzel during the late 1950's in connection with John

Strong's studies of Venus, he never discussed our earlier report of a peculiar flying object over Arrey, New Mexico in 1949. What I saw was not a mirage; it was a craft with highly unusual performance. It was not a balloon; at that time we were the innovators and manufactureres of the new balloons and I certainly would have known about any new developments as I was newly in charge of General Mills' Balloon operations. It was not the X-1 which was in its hangar at Muroc that Sunday. It was nothing from White Sands nor from Alamogordo AFB for we were in radio contact with Range Control and were informed that our operation was the only one active on Sunday. For these reasons, I'm cynical about Menzel and his approach to science." Many people in UFO research know that Dr. Moore has been involved in the attempts to explain the Roswell incident (July, 1947) as the result of the "crash" and retrieval of special high altitude balloon array that was built and flown as part of a special project called "Mogul." Not as many people know of Moore's own sighting, however.]

PROJECT TWINKLE: Menzel and Hynek were not the only scientists who allowed skepticism to overrule their rationality. I invite Dr. Louis Elterman to step forward. The name "Elterman" is hardly known in UFO history. However, he played a significant role in the development of that history because he wrote the final report of Project Twinkle.

Project Twinkle was established by the Geophysics Research Division (GRD) of the Air Force Cambridge Research Laboratory (AFCRL) in February 1950, after more than a year of sightings of the so-called "green fireballs" which appeared mostly in the southwestern states (few were seen elsewhere). It was the first directed effort to collect scientific data on unusual objects or "phenomena" that were seen over military reservations in the southwestern United States in the late 1940's. [For a much more complete description of the "green fireball mystery" see *THE UFO-FBI CONNECTION*, available from this author or at Amazon.com.]

The data to be collected under Project Twinkle included the descriptions of phenomena as derived from multiple witness sightings and from photographically recorded sightings. It was hoped that multiple witness, optically instrumented sightings would occur so that object altitudes and sizes could be calculated. The project utilized the military personnel and employees of a contract company (Land-Air) that operated cinetheodolite (Askania) cameras at the White Sands Missile test range. The project ran through two contractual periods (April 1 to October 1, 1950 and October 1, 1950 to March, 1951). During the post-contractual period (April - November, 1951) several conferences were held but no conclusions were reached although a number of explanations were proposed.

In November, 1951 Dr. Elterman wrote the final report of Project Twinkle. (Reference 12) In the abstract of the report he claimed that "the gist of the sightings is essentially negative" and that most of the unusual phenomena observed could be attributed to man-made objects or natural phenomena. He recommended that the Project be ended. The body of his report was consistent with these conclusions. However, evidence found in the files of Project Blue Book shows that Elterman did not report (covered up?) the truly significant findings of Project Twinkle. Of particular interest is his summary of the first contractual period which says the following:

"Some photographic activity occurred on 27 April and 24 May, but simultaneous sightings by both cameras were not made so that no information was gained. On 30 Aug. 1950, during a Bell aircraft missile launching, aerial phenomena

were observed over Holloman Air Force Base by several individuals; however, neither Land-Air nor Project personnel were notified and, therefore, no results were acquired."

Elterman went on to say, "Generally the results of the (first) six-month contractual period may be described as negative." During the second contractual period there were hardly any sightings by individuals and there were no photographic sightings. "The results during this period were negative," wrote Eltermann.

A reader of this report who is skeptical about the reality of UFOs might well conclude that Project Twinkle had failed to obtain any information about the sighted phenomena (objects). However, that is false. Despite what Elterman said in the report, Project Twinkle was successful: it proved the existence of TRue UFOs - TRUFOS. That is, the project proved that unexplained phenomena or objects had been seen in the vicinity of certain military areas in the southwest, notably around the White Sands area.

As concrete examples of this proof, consider the sightings of April and May 1950. According to Elterman (see above) "simultaneous sightings by both cameras were not made so that no information was gained." [Note: for a proper triangulation - in this case height measurement - of a moving object it is necessary that measurements of angular elevation and azimuth must be made from at least one location and at the same time either (or both) elevation and azimuth from another location. Non-simultaneous measurements will yield erroneous values of height of the object. In some cases it might be possible to apply a correction factor to one or both measurements to improve the accuracy of the calculation.] However, the mere fact that sightings of unidentified objects were made using both (Askania) cameras, even though the sightings were not simultaneous, means that the unidentified objects existed!! A two page report dated July 1, 1950, and found in the Blue Book/AFOSI microfilm files goes even further and supplies some of the data which Twinkle was set up to obtain: height and size. The report reads as follows:

31 May 50

Subject: Aerial Phenomena

To: Commanding Officer

AF Cambridge Research Laboratory

Attn: Base Directorate, Geophysical Research

230 Albany St

Cambridge, Massachusetts

1. Per request of Dr. A.O. Mirarchi, during recent visit to this base, the following information is submitted:

2. Sightings were made on 27 April and 24 May 1950 of aerial phenomena during morning daylight hours at this station. The sightings were made by Land-Air, Inc. personnel while engaged in tracking regular projects with Askania Phototheodolites. It has been reported that objects are sighted in some number; as many as eight have been visible at one time. The individuals making these sightings are professional observers therefore I would rate their reliability superior. In both cases photos were taken with Askantias.

3. The Holloman AF Base Data Reduction Unit analyzed the 27 April pictures and made a report, a copy of which I am enclosing with the film for your information. It was believed that triangulation could be affected from the pictures taken on 24 May because pictures were taken from two stations. The films were rapidly processed and examined by Data Reduction. However, it was determined that sightings were made on two different objects and triangulation could not be affected. A report from the Data Reduction and the films from the sighting are enclosed.

4. There is nothing further to report at this time.

(Listed as inclosures are: Data Red Report#1, Data Red Report #2, Film P-10 of 24 May 50, Film P-8 of 24 May 50, Film P-10 of 27 April 50 and a Map of the Holloman AFB range which presumably showed the locations of cameras P-8 and P-10.)

The Data Reduction Unit Report on the April sighting reads as follows:

OBJECTS OBSERVED FOLLOWING MX776A TEST OF 27 APRIL 1950

1. According to conversation between Col. Baynes and Capt. Bryant, the following information is submitted directly to Lt. Albert.

2. Film from station P10 was read resulting in asimuth (sic) and elevation angle being recorded on four objects. In addition, size of image on film was recorded.

3. From this information, together with a single azimuth angle from station M7, the following conclusions were drawn:

a. The objects were at an altitude of approximately 150,000 feet.

b. The objects were over the Holloman range between the base and Tularosa Peak.

c. The objects were approximately 30 feet in diameter,

d. The objects were traveling at an indeterminable, yet high speed.

(signed) Wilber L. Mitchell

Mathematician

Data Reduction Unit"

This report clearly shows that Elterman was wrong in stating that "no information was gained." Here we have an explicit altitude (150,000 ft) and an explicit size (30 ft). Of course the measured angles might have been slightly in error, so these calculated values might not be completely accurate. Probable accuracy would be plus or minus 10 or 20 percent. But even if they were off by 100% in altitude and size (a factor of two: for example, perhaps the object was only 75,000 ft. high and 15 ft. in diameter) there would be no natural phenomenon or manmade device which could explain the sighting. It is interesting to note that the 30 ft size calculated by Mr. Mitchell is the same as the calculated size of the object seen by C.B. Moore almost exactly a year earlier, if Moore's object had been at an altitude of 100,000 ft.

A reasonable question to ask is, why didn't Elterman mention the successful triangulation on April 27? According to Elterman's Twinkle report, simultaneous sightings "were not made" on both April 27 and May 24. However, the letter to Dr. Mirachi from the mathematical reduction unit clearly shows that the lack of simultaneity only applied to the May 24 sighting, when the cameras were pointing at different objects. Could it be that Elterman never saw the report by the Mathematical Reduction Unit? This seems hard to believe since he was the director of the project and had complete access to the records. [Note: Mirachi was the first director of Project Twinkle. He retired in late 1950 and was not involved in writing the final report. Elterman replaced Mirachi as project director.] Clearly Elterman was aware of the sightings in April and May 1950, and also of the other multiple witness sightings and multiple films of objects.

One very disturbing aspect of the Project was pointed out in Elterman's report: there was "no provision" [no money] for in-depth analysis of the photographic data they had. Furthermore, according to Mr. Warren Kott, who was in charge of the Land-Air operations at Holloman AFB (as stated by Elterman in

his report), "A formal report covering the year's vigilance has not been issued since the contract contained no such provision." Kott pointed out that "...a time correlation study should be made covering the film and verbal recordings at both Askania stations. This would assure that these records did not contain significant material. However, such a study is quite laborious, and would require about thirty man-days to complete. **Again, no provisions are contained in the contract for this study.**" (Emphasis added.)

Pity the poor, impoverished Air Force Cambridge Research Lab. The data were available, but there was no money for analysis. Guilty of dereliction of scientific duty or of simple stupidity? You be the judge!

Mr. Kott went on to say that Land-Air personnel might be able to analyze the data later on in their spare time, but there are no records available to show whether or not that was done. According to Elterman's report, at the end of the project all the film and tape recordings were sent to the AFCRL/GRD. In 1952 Capt. E.J. Ruppelt, the first director of Project Blue Book, learned of the White Sands/Holloman movies and tried to locate the data. He was not able to do so. (Reference 13) [An FOIA request in the late 1970's caused a further search for the film, based on a handwritten note on the letter to Mirarchi. The handwritten note says "film on repository with AFRCL." The film was not located. Thus it appears that the "proof" that was available almost 50 years ago has been lost forever.]

Elterman's report clearly was not complete, since the bulk of the hard data had not yet been analyzed. One wonders, therefore, why he repeatedly stated that "no information" was gained. Was he a "sloppy" scientist? Did he have his mind made up already and did he think that he didn't need further analysis? Was he afraid of what might be found in the data? Was he trying to prevent the rest of the scientific community from discovering that the data proved the reality of TRUFOS? Unfortunately, we don't know the answers to these questions .

All right, AFCRL, up against the wall!!

OK! Now that I've got your attention....

where are those films?

The previous discussion shows (at least) two things: (a) the data to prove the existence of UFOs existed years ago, and (b) the few scientists who had access to the data were willing to make unscientific public statements in order to either explain the data away or cover it up. Because these scientists did not alert the rest of the science community to the potential validity of the UFO data, the rest of the community decided to agree with the Air Force's public position that there was nothing to UFO sightings. Thus, the rest of the scientists pulled the wool over their own eyes and thereby created a "self-cover-up." Although the basic data (sightings) were available in open literature sources, they refused to look....."There are none so blind...."

BALLOON TRACKER SIGHTINGS: The sightings already discussed are only a small fraction of the early sightings that were overlooked by the science

establishment. There were many others. Consider, for example, the sightings by the General Mills employees who launched the Skyhook balloons. These men were all professional observers, as was C.B. Moore [and Dr. Moore told me in his December, 1986 letter that he knew many of the balloon scientists mentioned below]. In February 1951, Dr. Urner Liddel of the Naval Research Laboratory was quoted as saying that the only credible sightings of unidentified objects were actually sightings of Skyhook balloons. (Reference 13) [Note: a week or so later Dr. Mirachi, the first director of Project Twinkle, publicly disputed Liddel's claim.] Apparently he did not know about (or he covered up!) the sightings by the employees of the General Mills Aeronautical Research Division who were tracking a balloon near Artesia, New Mexico, during the month preceding Liddel's public statement. They had launched a Skyhook balloon several hours earlier and it was at an altitude of about 112,000 ft, at the time of the sighting. It was also about 100 ft. in diameter and was easy to see from the ground in the clear atmosphere at 11:00 a.m. Suddenly, what appeared to them and other observers to be two objects "larger than the balloon and of a dull grey color" approached the balloon from the northeast, made "an abrupt turn" going partway around the balloon (as it appeared from the ground) and disappeared "at a very fast rate of speed" in the northeast.

Another major series of sightings by balloon personnel took place on October 10 and 11 of 1951. The witnesses were pilots and engineers who were employed by the Aeronautical Research Division of General Mills. The reports of the sightings were written by Mr. J.J. Kalisewski, supervisor of balloon manufacture and a former Air Force pilot. Kalisewski's reports read as follows (I have included notes in parentheses):

(Observation 10 miles east of St. Croix Falls, Wisconsin at 10:10 a.m., 10 Oct. 1951.)

"We had just spotted our trajectory flight and were approaching from the north at an altitude of 4,000 ft. We started to climb toward the balloon on a course of 230 degrees (i.e., they were facing southwest; the sun was in the east, far to their left). At 6000 ft I noticed a strange object crossing the skies from east to west, a much higher and behind the balloon. I estimated our balloon was at approximately 20,000 ft, at the time. Using our balloon for comparison this object appeared to be about 1/4 the size of the balloon, were climbing and about 6 miles northeast of the balloon. (The angular elevation of their line of sight to the balloon was about 24 deg.) The object had a peculiar glow to it, crossing behind and above our balloon from the east to west very rapidly, first coming in at a slight dive, levelling off for a minute and slowing down. then into a sharp left turn and climb at an angle of 50 to 60 degrees into the southeast with a terrific acceleration and disappeared. Jack Donaghue and I observed this object for approximately two minutes and it crossed

through an arc of approximately 40-50 deg. We saw no vapor trail and from past experience I know that this object was not a balloon, jet, conventional aircraft or celestial star."

(Observations during the morning of Oct. 11, 1951.)

Time: 0630. Dick Reilly and I were flying at 10,000 ft. observing the grab bag balloon when I saw a brightly glowing object to the southeast of the University of Minnesota Airport. At that time we were a few miles north of Minneapolis and heading east. I pointed it out to Dick and we both made the following observation. The object was moving from east to west at a high rate and very high. We tried keeping the ship on a constant course and using (a) reinforcing member of the windshield as a point (of reference). The object moved past this member at about 50 deg per second. This object was peculiar in that it had what can be described as a halo around it with a dark undersurface, It crossed rapidly and then slowed down and started to climb in lazy circles slowly. The pattern it made was like a falling oak leaf inverted (i.e., rocking from side to side while "falling" upward). It made these gyrations for a couple of minutes and then with a very rapid acceleration disappeared to the east (i.e. when last seen this object was traveling from west to east). This object Dick and I watched for approximately five minutes. I called our tracking station at the University of Minnesota airport and the observers there on the theodolite managed to get glimpses of a number of them, but couldn't keep their theodolite going fast enough to keep them in the field of their instruments. Both Doug Smith and Dick Dorian caught glimpses of these objects in their theodolite after I notified them of their presence by radio. I don't know how to describe its size because at the time I didn't have the balloon in sight for comparison and the weather was CAVU (clear and visibility unlimited). Shortly after this we saw another one, about two hours later, but this one didn't hang around. It approached from the west and disappeared to the east, neither one leaving any trace of vapor trail.

The ground witnesses were interviewed on Oct. 12 by Air Force intelligence (Major Kaske) who wrote as follows:

The second of the observations reported above (i.e. Oct. 11) was confirmed by Mr. Dorian who was one of the crew at the University of Minnesota Airport tracking the balloon ascension. The object crossed Mr. Dorian's field of vision on a path roughly from 4 o'clock to 10 o'clock and when (he) tried to track it in the theodolite he got only a brief blur -- believes it was because the theodolite wasn't focused. The object was visible in the theodolite for under two seconds and appeared smoky grey -- no halo or glow was noted -- cigar shaped, left no vapor trail and gave no reflection such as sun reflecting off metal. Mr. Smith -- not present at the time of interrogation so this is heresay reported by Mr. Dorian -- agreed with Mr. Dorian in all respects on the above information. Both (men) claim that during their period of visual observation they saw two more like objects which finally formed in a straight pattern after the first and all departed at the same time. The men in the plane saw only the one object described above. All of these men were positive on the following points:

- 1) Object though vaguely defined and blurred by distance retained definite shape
- 2) No vapor trails, exhaust flashes of jet propulsion flames were seen
- 3) The object acted exactly as if under definitely controlled flight -----

Dr. James McDonald has reported [in 1968] that Kalisewski confirmed the details of these sightings to him and was "...emphatic in asserting that it was not a balloon, jet or conventional aircraft," Kalisewski felt that the objects "...matched no known aeronautical device." The Air Force (Project Grudge) concluded that the sighting on Oct. 10 was of an "aircraft" but has left the sightings of Oct. 11 "unidentified." Apparently Kalisewski was not aware of this until McDonald told him. Kalisewski was "...unable to understand how any distinction could be drawn between the two sightings." (Reference 14)

NON-PUBLICATION OF SCIENTIFIC PAPERS

There are numerous other sightings by well-qualified observers which have been swept under the rug by the Air Force and skeptical scientists and which have been ignored by the general science community over the last 39 years. In the early 1960's NICAP tried to publicize such sightings in THE UFO EVIDENCE and in the late 1960's Dr. McDonald tried to bring a number of sightings before the science community. (References 1, 2, & 14) Unfortunately, the efforts were largely ignored and the science community cut itself off from the data by refusing to publish UFO articles or by publishing, with great reluctance, articles that did not debunk the subject. I have made several attempts at publishing papers which were rejected. ("By chance," I was also successful in two instances related to the New Zealand case.)

My first attempt was in December 1974, a year after the 1973 flap. I wrote a paper entitled "Why Would a Scientist Decide to Investigate UFOs." The paper contained an in-depth analysis of a sighting in western Virginia that took place in the spring of 1970. The paper also provided a general discussion of the UFO problem and even discussed the reluctance of journals to accept papers on the subject. I had the paper reviewed by several scientists and I had rewritten it several times. I sent the paper to Science magazine along with a list of competent referees. Two weeks later I got a short letter from the editor, Philip Abelson, who wrote: "Unfortunately, we now have a substantial backlog of accepted articles and we are obligated to give them first priority for publication. Hence we cannot handle your article at this time." The implication of his response was that I needed a rapid publication (i.e., within a few months) and he couldn't accommodate my wish. Actually, I had indicated no such wish in my letter accompanying the article and I was fully prepared to wait a year if necessary to get publication in such a prestigious journal. Furthermore, I knew, as did he, that many articles are published long after they are submitted. Therefore, I interpreted his response as a disguise for what he really wanted to say: "get lost" or "go somewhere else." I should point out that Science had already published two articles on the subject (in 1967, W. Markowitz, Volume 157, pg. 1274, and in 1970, D. Warren, Volume 170, pg. 599). Each of these was a "debunking article." Markowitz argued that UFOs couldn't be spacecraft because they violated the rules of physics as understood by Markowitz and Warren argued that UFO reports were largely the product of a social condition known as "status inconsistency". Therefore I thought it barely possible that Science might publish a "non-debunking" article in deference to "fairness." Evidently I was wrong.

I never tried to resubmit my article to Science nor did I submit it to another journal. (A shortened version was published by the NICAP in The UFO Investigator in November and December, 1975.) I did not try to submit another article to a journal until 1979. This time I succeeded, but my success was a result of chance: I was "in the right place at the right time," you might say.

The general skeptical attitude of scientists -- or at least of journal editors -- toward UFOs has resulted in the appearance of several "debunking" articles in major journals over the last 35 [50] years. One of these articles appeared in a major technical journal, Applied Optics, in November 1978. (Reference 15) The article purported to explain glowing UFOs sighted in the Uintah Basin, Utah, in the middle 1960s as swarms of insects in flight through electrostatic fields which caused corona discharge from the antennae, legs, and other appendages of the insects. I have called this "the buggy UFO hypothesis" (abbrev.: "BUFOH"). The originator of the BUFOH, Dr. Philip Callahan, an

entomologist at the University of Florida, was interviewed on several news shows. Even the CBS Evening News with Walter Cronkite gave the Applied Optics paper some coverage.

Within 2 weeks of the appearance of the article I had written a letter to the editor in which I pointed out errors in the paper, errors both in interpreting the cited cases as being sightings of insect swarms and errors in scaling the physics from laboratory-sized experiments with single insects to swarms in free flight. The editor turned down my letter. However, he did say that he felt a valid response to the article probably should be published to be fair to the subject, but he was going to wait for all the responses before deciding and then pick the best one. Thus, although I was "put on hold" I nevertheless had a "moral commitment" from the editor that something rebutting the BUFOH article would be published.

As fate would have it, while I was arguing with the editor of Applied Optics over a response to the BUFOH article, events halfway around the earth were taking place which would change the situation considerably (and affect my life for several years afterward). I refer to the [then] famous New Zealand sightings, and, in particular to those of December 31, 1978, which were multiple witness sightings that featured (a) 16 mm color movie film, (b) ground radar detections, (c) airplane radar detections, (d) a live tape recording by a news crew on the airplane from which the sightings were made occurred, and (e) a live tape recording of conversations between the air crew and the air traffic control radar operator at the ground radar station at Wellington, New Zealand. (This is certainly one of the most documented of the civilian UFO sightings since 1947.)

I investigated these sightings first by phone and then "on-site" in New Zealand and Australia. I compiled a complete history of the events based on extensive interviews with the pilot, copilot, news reporters, cameraman and the radar controller. I analyzed the radar and the movie film. I discussed the sightings with a number of scientists and then compiled a large report. Because interest in the sightings had been worldwide, I wrote a short paper based on one portion of the sightings and sent it to Nature (published in England). (Nature had published a brief mention of the sightings soon after they occurred). In early May, 1979, I received a letter which said that the paper was rejected for lack of space and because, according to the editor, it "...has to be part of a much larger survey that is presumably being conducted" (i.e., "get lost"). Unfortunately, he gave me no hint as to where the presumed survey was being conducted. (No such survey has ever been published.)

In the meantime, I received a letter from the editor of Applied Optics. As of March 19 he had received no other comments on the BUFOH, so he wrote "...inasmuch as your manuscript is the only rebuttal I have received... I suppose a version of your manuscript could be that rebuttal." When I received his letter I considered rewriting my rebuttal letter, but at the same time I was "full time" on the New Zealand case, so I delayed. Then, when my paper was rejected by Nature I got an idea. I decided that I could try to take a chance with the editor of Applied Optics.

In early May I submitted a revised version of my New Zealand paper with a letter in which I pointed out that, although the paper did not respond directly to the BUFOH article it nevertheless "...contains some physical data about an unusual light source and, since the data are primarily of an optical nature, the article is suited to your journal." To my great delight the editor bought this argument and, in August, my paper was published. (Reference 16 or [CLICK HERE](#))).

To close the "buggy" chapter of the story, however, I should point out that eventually the editor did receive another response to the BUFOH. That response was also published in August. (Reference 17)

I have always believed that the appearance of my paper was a "lucky accident" that resulted from the combination of (a) the appearance of Callahan's article and my attempt to rebut it and (b) the publicity surrounding the New Zealand sightings. I do not believe that it was a result of a liberal attitude toward UFO articles on the part of the editor, who referred to "UFO believers" as "99 and 44/100ths percent kooks."

When I had finished writing my short Applied Optics paper, several months before it was published, I had sent a copy to William Ireland, a scientist in New Zealand. He disagreed with my point of view and so he and another scientist wrote a short article in which they criticized my claim that the object was unidentified. They claimed that the object discussed in my paper was merely a squid boat. I received a copy of their paper for publication in Applied Optics during August and reviewed it at the request of the editor. Then the editor offered me a chance to rebut Ireland.

I submitted my rebuttal in September so that it could be published in December along with the article by Ireland and Andrews, It was too long for the editor's "taste" so he asked me to shorten it and return it quickly. However, by that time I had arranged for some photos of squid boats to be taken in New Zealand, so at the end of October I wrote a letter- to him saying that I wanted to wait until after the tests and then submit a revised paper. I expected my paper would be ready in a month or so and would be published in the early spring of 1980. But I was wrong.

In December 1979, Applied Optics published the paper of Ireland and Andrews. (Reference 18 or [CLICK HERE](#)) Early in January 1980, the editor and I both received a letter that is the "personification" of resistance on the part of scientists to an unbiased treatment of the UFO subject. The letter was from a prominent optical scientist. He began his letter by thanking Ireland and Andrews for "their trenchant discussion -one might more accurately say destruction -- of Maccabee's earlier report." He went on to say that "...as an individual concerned over the widespread public acceptance of pseudoscience, I would not like to see Applied Optics inundated with a flood of communications of this calibre," He went on to indirectly criticize the editor by saying that the "only useful conclusion" from the two short papers is that "the initial letter (paper) shouldn't have been published." [Note that this scientist did not complain about the earlier publication of the "buggy UFO hypothesis" even though he would have realized, had he thought about it, that the optical theory presented in that paper was "buggy" to say the least.]

Needless to say, this criticism gave the editor second thoughts about publishing my response. I immediately wrote to the critic and also to the editor to express my position on the matter. I also enlisted the aid of another well-known scientist who took my side in the argument that I should at least be allowed a rebuttal.

Eventually the critic relented and wrote to the editor that, in spite of his "...personal conviction that this is a scientifically foolish piece of work," my rebuttal should be published "...with the confidence that making it available in print will simply let others reach the same judgement." In August 1980, my rebutting paper was published along with a statement by the editor that this would close the discussion. (Reference 19 or [CLICK HERE](#))

Having "learned its lesson," Applied Optics has carried no further UFO-related articles. However, the papers that were published are of some historical significance because, for the first time in history (to the best of my knowledge), a refereed science journal published a series of technical discussions of a single UFO sighting. Unfortunately, another journal was not as "liberal."

In May 1980, the Journal of Atmospheric and Terrestrial Physics (JATP), published in Britain, included a paper (submitted in September 1979) by Canadian atmospheric scientist, Dr, William Lehn, entitled "On the Sighting of Distant Unidentified Objects." (Reference 20) The abstract of Lehn's paper reads as follows: "Reported sightings of mysterious bright objects are used to illustrate a general principle that applies to the observation of small distant objects: no image of such objects can be considered accurate unless an analysis demonstrates that no refractive distortion is present. It is proposed that the UFO sightings off New Zealand in January 1979 may be due to images transmitted by the Novaya Zemlya effect, an anomalous atmospheric refraction..." Lehn began his report by citing his sources of information: early January, 1979, news stories in The New York Times and two Winnipeg newspapers. He then very briefly summarized the sightings in December, 1978, and the January 2 attempt of the New Zealand Air Force find radar and visual UFOs by flying in the early morning in the same area. The New Zealand Air Force had reported that there were "reflections from bright night-fishing lights used by the Japanese squid fleet." Lehn listed several of the published explanations (Venus and "unburned meteorites") and then wrote: "Notably absent from all the reported theories was any consideration of atmospheric refraction phenomena, yet these may offer the best explanation." Lehn then discussed his theory, which was essentially that of a looming mirage which can make visible an object which is beyond the geometric horizon. Such an object would not ordinarily be seen, but may be seen when there is a thermocline in the atmosphere, with a layer of warm air above a layer of cool air. This sort of layering can cause light to bend somewhat around the earth. Referring to the bright light that was seen and filmed Lehn wrote: "A well-spread thermocline favours the appearance of the Novaya Zemlya effect, by which means brilliant lights, such as those on the squid boats, can easily be transmitted over the reported 150 km distance. The image generally undergoes sufficient distortion to prevent its recognition. Motion of the image, even for stationary objects, is provided by fluctuations in the atmosphere: the image can appear to skitter about, move at 'unnatural speeds', or disappear instantly." In other words, according to Lehn the sighting of the bright light and its apparent motion might have been the result of a mirage of the squid boat fleet.

I'm sure that, to the scientific reader who had no information other than what was presented in this article, the suggested explanation would seem quite reasonable and probably correct. However, having completed my thorough investigation I knew that none of the several anomalous lights seen and filmed during the New Zealand sightings could have been mirages. Of particular importance is the fact that the sighting line to the very bright light, which Lehn suggested was the distant squid fleet, was downward at a rather steep angle and definitely not nearly horizontal toward the squid fleet. (A mirage is seen typically within less than a degree above the horizon.) Furthermore, the air crew reported seeing the squid fleet at the same time as the UFO and they were in widely different directions. Since I could prove that Lehn's explanation was wrong I decided to respond to Lehn's article. I sent the following short article (published here for the first time) in July, 1980.

ON THE NEW ZEALAND SIGHTINGS OF DECEMBER 1978

ABSTRACT

Lehn (1980) has used the New Zealand sightings to illustrate a general principle involving atmospheric refraction of distant lights, namely, that image of distant objects can be distorted by the atmosphere when viewed over long horizontal or nearly horizontal paths. However, several of the New Zealand sightings were of bright lights at angles far below or far above the horizon, suggesting that atmospheric effects were minimal.

DISCUSSION

During the early morning of December 21, and again during the early morning of December 31, 1978, New Zealand freighter aircraft crews and the Wellington Air Traffic Control Center reported apparently unusual radar returns. The air crews also reported visual sightings of unusual bright lights. These lights were not always seen close to the horizon. Some were at considerable elevation angles and some were seen at depression angles as great as 90 deg. These sightings with apparent radar confirmation made worldwide headlines and the various new services carried versions of the stories as reported in New Zealand newspapers. W.H. Lehn (Lehn, 1980) has suggested that these sightings may have been due to anomalous refractive effects which could bend and even trap electromagnetic rays, thus letting the rays propagate over unusually long, nearly horizontal (or tangential to the earth's surface) paths. He has apparently based his analysis on the newspaper accounts of the sightings.

According to Lehn, the newspaper accounts which he obtained referred to explanations involving meteors and planets, etc., but did not mention explanations involving atmospheric refraction phenomena. However, such refractive effects were, in fact, suggested publicly by several scientists most notably by Dr. Neal Cherry who is a

meteorologist (Christchurch Star, 1979a; 1979b) Dr. Cherry considered the possibility that what was seen and filmed during the December 31 flight was light from a distant squid fleet, known to be about 260 km east of Christchurch. According to Dr. Cherry, the light from the fleet would have been bent over the horizon by the atmosphere so that it could be seen by an aircraft flying at distances less than 50 km from the East coast of the South Island of New Zealand. The atmosphere also played an important role in the explanations which were published by the Royal New Zealand Air Force after its own investigation. According to the press release, "The lights were almost certainly from surface or planetary sources affected by atmospheric reflection, refraction and distortion." However, all of these explanations have failed to take into account the explicit descriptions of the witnesses who claim that they were often looking at unusual lights which were at considerable angles above or below horizontal and which, in some cases, may have been quite close to the aircraft.

The December 31 sightings involved multiple witnesses, "on-the-spot" tape recordings and 16 mm professional color photography. These sightings can be broken roughly into three periods of "activity:"

1) while the plane was flying south from Wellington to Christchurch; 2) just after departing from Christchurch during the flight north; and 3) while approaching Cape Campbell on the flight north. Both faint and well exposed images were recorded photographically during the first period and very bright images were recorded during the second and third periods. The cameraman also photographed known light sources (landing lights, etc.) which have been used to provide rough calibrations of the film. During the first and third periods there were also radar targets on the Wellington radar, some of which seemed to "interact" with the aircraft and even to appear as lights. For example, on the Wellington Air Traffic Control Center recording tape one finds the following conversation between the airplane (PLANE) and the controller (RADAR): RADAR - "...target briefly appeared at 12:00 to you at 10 miles...disappeared again."

PLANE - "Thank you." The pilot reported that he saw a steady light appear ahead of his plane for a short time as the message from the the controller was being transmitted. Further on in the tape one finds:

RADAR - "Target is at 12:00 at 3 (nautical) miles." PLANE - "Thank you. We pick it up...its got a flashing light." There are other examples of coincidences involving the Wellington radar, as well as occurrences when there was no positive confirmation of a visible targer in the direction of a Wellington radar target.

The period of activity which has received the greatest public exposure and debate is the second period, when the plane was flying in a direction 55 deg east of true north out of Christchurch, starting with a liftoff time of 2:17 A.M., local time. About 2:19:30, after climbing to about 750-900 m the plane broke through a cloud layer and the passengers observed a very bright light bewteen 20 and 40 deg to the right of straight ahead (th spread in angles results from different recollections when interviewed about 5 weeks after the events). As the plane flew northeast and increased in altitude the bright light appeared to be at an altityude below the plane and appeared to travel with the plane. When about 70 km from Christchurch, in a effort to learn some more about the nature of the liht, the pilot turned the plane onto a southeast course for a minute or two and then returned to the initial northeast course. The light appeared to follow the right and left turns in such a way as to spend most of its time that the right side of the plane. When last seen just after the left turn the depression angle to the light was an estimated 35-45 degrees, thus ruling out the squid fleet light, since the altitude of the plane was only about 4 km, and also the planet Venus, both of which were initially suggested as sources for the bright light.

(Note: Venus would not have risen over the horizon until about 3: A.M.local time.)

The light which was observed during the second period of activity was filmed for several minutes.

The light was also apparently picked up on the airplane radar, which registered a target in the direction of the light until the direction to the light became too far to the right to register on the radar sweep (limited to about +/- 60 deg from straight ahead). By combining measurements of the density of a streaked film image (streaked rather than steady to avoid overexposure) with the minimum estimated radar distance to the target, about 18 km, Maccabee (Maccabee, 1979) estimated the luminous intensity to be around 10^5 cd.

The calculated luminous intensity and the fact that the sighting line was considerably below the horizon near the end of the sighting has led to the suggestion that the source was a single squid boat fishing with its lights on at a location about 60 km northeast of Christchurch (Ireland and Andrews, 1979).

However a search of the records of the New Zealand Ministry of Agriculture and Fisheries failed to locate any boat fishing anywhere near Christchurch at the time of the sighting (Ireland, 1979). Furthermore, analysis of the combined radar and visual data indicates that the bright source actually moved a distance of 40 km or more during the 12-14 minutes of the sighting, whereas a squid boat is stationary while it is fishing (Maccabee, 1980).

It is the opinion of this author, having extensively interviewed the witnesses and having studied the film and the sound recordings in order to accurately reconstruct the history of the sightings, that atmospheric effects did not cause these sightings, although the atmosphere may be slightly distorted some of the filmed images.

Lehn has apparently based his analysis on several press reports. Although this author is not familiar with the specific reports quoted by Lehn, this author is familiar with the original press accounts which appeared in New Zealand and Australia, and which were probably summarized in the reports quoted by Lehn. A comparison of the New Zealand and Australian press reports with information obtained during lengthy interviews with the witnesses confirms the general rule that newspaper reports are poor sources of technical data. It therefore appears

inadvisable to base explanations for sightings such as these on news media reports alone.

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The journal editor received my paper in early August and about two months later I received his response: a rejection based on the opinion of the referee who wrote as follows:

"I have read the enclosed short note by B.S. Maccabee entitled 'On the New Zealand Sightings of December 1978,' The article has been written in response to a paper published in JATP in May 1980 by W.H. Lehn. This article unlike that of Lehn, contains no real science and as such cannot be accepted for the Journal. Sightings of unidentified objects are unfortunately often vague and imprecise and sometimes contradictory. I do not consider that this article contributes in any way towards a true scientific explanation of the phenomena described. It may be suitable for a newspaper but not for a scientific journal."

I was dismayed, of course, and also flabbergasted to learn that my paper, which was based on extensive on-the-spot research and subsequent data analysis, contained "no real science," whereas, Lehn's paper, which was based on "armchair research" and speculation, contained "real science." As a further blow to my ego, the referee stated his opinion that my paper contributed nothing to "a true scientific explanation of the phenomena described." It was true that I had not proposed a "scientific" explanation. Instead, I had provided reasons for rejecting the explanations that had been proposed. But, of course, this is where science advances: when conventional explanations are not sufficient one must invent new explanations. But before considering unconventional explanations it is first necessary to prove that conventional explanations don't work, and this is what I did.

After some thought and "soul searching" I decided to respond, based on the fact that my paper had not been rejected on technical grounds, but rather as a result of the opinion of the referee that there was no science in it. Near the end of October I resubmitted the paper with a few modifications to make it clearer that the squid boat hypothesis did not work. In particular, in the fourth paragraph I wrote (compare with the same paragraph as presented above):

When about 70 km from Christchurch, in an effort to learn more about the light, the pilot turned from the northeast to a southeast heading for a minute or two and then headed northeast again. While on the southeast track the copilot, sitting on the right side of the plane, could see the unusual light nearly due south of and below the plane, and, at the same time, he could see the squid fleet east-southeast of the plane on the horizon. The color of the unusual light was described as being more orange than the brilliant white of the high temperature incandescent lamps used by the squid fleet. The unusual light was last seen at the right of the aircraft during or after the left turn which the plane made to head back in the original northeast direction.

I also added a statement which was based on photographic experiments which had finally been carried out, but too late for inclusion in my second Applied Optics article: "Furthermore, a comparison of images of squid boats, obtained under comparable optical conditions with images on the film shows that there are considerable differences." What this refers to is the fact that the squid boat images show the expected water reflection immediately below the bright lights but the UFO film images show no evidence of reflection. The lack of a reflection implies that the light was far above the water. Beside the above changes I also the last paragraph about the danger of basing technical analysis on news reports.

I resubmitted the paper in late October along with a letter to the editor that responded to the referee. I wrote in my letter:

Naturally I was disappointed to see that you decided not to accept my paper as a result of the opinion of the referee. However, upon reading the referee's opinion I

have decided to resubmit the paper and request a reconsideration based on the following comments.

I note that the referee has not rejected my paper on technical grounds, but rather on philosophical grounds, specifically, on the grounds that, in the referee's subjective opinion, my paper does not contain "real science." I wonder what the referee considers to be "real science." Is it real science to allow an incorrect explanation to stand unchallenged in a respected, refereed journal such as JATP? I dare say that if a published paper contains errors in logic or mathematics, experts in the particular field addressed by the paper do not hesitate to write articles pointing out the errors, and journals do not hesitate to publish the articles, along with any further articles by the original author who made the mistakes.

According to the referee, Lehn's paper contains "real science," But Lehn's paper contains no calculations, so quantitative application of formulated theories cannot be what the referee means by real science. In fact, a close reading of Lehn's paper shows that it contains mainly speculation which, unfortunately, was based on nearly a complete lack of quantitative or semi-quantitative data, such as sighting azimuths and elevations. I pointed out this failure of Lehn to search out more data before attempting to apply his "Novaya Zemlya" theory (which, by the way, is a very elegant explanation of the refractive effect he addresses in his Applied Optics paper). And yet, the referee apparently "forgives" Lehn for not attempting to obtain more data (by contacting the witnesses, etc.) and subsequently bestows upon Lehn's paper the accolade "real science."

There is no doubt that "real science" occurs when an expert in some field of science makes use of existing theory to explain some new or unusual phenomenon, especially when quantitative comparisons between predictions of the theory and actual measurements are satisfactory (keeping in mind experimental error and any approximations, etc. that might go into deriving quantitative results from the theory). Apparently in the referee's mind "real science" also occurs when there is a failure in agreement between predictions from theory and

experimental results, as long as the attempt at explanation has been made.

In contrast, I believe that real science occurs when it can be shown that predictions from theory do not satisfy experimental results. Such failures of theory have, repeatedly in the history of science, indicated when a new understanding of a field of science is necessary.

The Michelson-Morely experiment on the speed of light is a prime example. However, if a referee had refused to allow publication of the M-M results because they violated "common sense" (when common sense" incorporates the old ether theory), scientists would not have been alerted to a fundamental problem with electrodynamic theory as interpreted within a Newtonian reference frame.

Specifically with regard to the New Zealand sightings, Lehn's theory requires sighting azimuths which are toward the bright sources of light (e.g., squid fleet) and elevation angles which are within 1 deg of the horizon. These requirements are essentially semiquantitative predictions of Lehn's theory (any mirage theory for that matter), namely (a) the sighting azimuth is predicted to be toward the light source to within a small fraction of a degree, and (b) the sighting elevation is predicted to be within 1 deg or so of the horizon. In the case of the New Zealand sightings both requirements (a) and (b) are "violated." Thus Lehn's theory does not explain the New Zealand sightings, and, in my opinion, it is unscientific for JATP to leave the reader with the opinion that Lehn's theory does, or even might, explain the sightings.

The referee has lamented that "sighting of unidentified objects are unfortunately often vague and imprecise and sometimes contradictory," and with this I would agree. However, in the few cases which are not vague and imprecise it may be possible to derive some facts about some new phenomena, assuming that the accepted theories cannot explain the observations. It seems to me that publications of information about well documented sightings that do demonstrate a degree of precision is necessary to let scientists know that something new may be happening. At any rate, this generalization by the referee does not

necessarily apply to the N.Z. sightings and it should not be used as a reason for rejection of my paper.

Finally, the referee has concluded that my article does not contribute "in any way towards a true scientific explanation of the phenomena described" and that therefore it is not suitable for publication in a scientific journal. I would like to ask the referee just how many papers he (she) thinks may have been published about experimental results before a "scientific explanation" was possible. How about papers announcing the Michelson-Morely results, or the "discovery" by Planck of his constant (a "theoretical experiment") or the discovery of X-rays or radium or the 3 deg K radiation (in this latter case a theoretical explanation was available but unknown to the discoverers of the radiation)...etc. Judging from the history of science it appears that failure to be able to explain a phenomenon "scientifically" is not sufficient grounds for rejection of a paper which describes the phenomenon.

Fortunately the editor of Applied Optics did not have the same view of "real science" as that held by the referee. The editor of Applied Optics published my original letter, which contained one of the few quantitative calculations about an unidentified object in the open literature, then he published a rebutting paper by two scientists in New Zealand and finally he published my rebuttal to their paper. Thus a reader of Applied Optics has a reasonable chance of being able to decide for himself what actually happened or what theories might be applied.

Unfortunately I cannot reply to Lehn in Applied Optics since the editor has requested an end to the discussion since it has gone somewhat outside the field of optics.

I closed the paper with a comment about submitting the paper and suggested that if the editor wanted another referee or further information he could contact a man who worked with Sir Bernard Lovell at Jodrell Bank observatory. I also pointed out that Lovell had seen the NZ film several times.

I sent my letter and the revised paper near the end of October. As of the middle of December I had still not heard from the editor so I wrote to him. He responded in late December with a second rejection. He said he had submitted all the papers, including the comments of the first referee to a second referee. The second referee wrote:

This topic is not the sort of material for a journal like JATP. From my reading of the papers which you sent me it is clear that there is not likely to be agreement on an explanation of the NZ sightings and until the experimental facts are sorted out more clearly, arguments and counter-arguments should be dealt with by correspondence between the contestants themselves and not in the open literature. I note that these sightings have already been the subject of claims and counter-claims in Applied Optics (also involving Maccabee) and there is no justification for reporting it in JATP. I support without hesitation the rejection of this paper.

In spite of this opinion of the second referee, the editor indicated that he would like to send my material to Dr. Lehn before making a final decision. I wrote back to say that I approved of his decision to consult Dr. Lehn before a final rejection and that I intended to send Dr. Lehn even more material on the sightings. By the end of January 1981 I had a letter from Dr. Lehn thanking me for the material I had sent.

I heard no more until May, 1981, a year after Lehn's paper was published. The editor sent me a copy of Dr. Lehn's reply, which was generally negative. The matter would have ended there except for an unexpected turn of events: William Ireland of New Zealand, who had written the critical Applied Optics article, had also submitted a letter that criticized Lehn's paper. Therefore, the editor had two authors' to satisfy as well as Lehn and the referees. He decided upon a "middle ground." Neither my paper nor Ireland's would be published in full. Instead, short summaries of each would be published along with an editor's comment that would, effectively, end the discussion in the journal.

I had no choice but to agree with this. At the end of May, 1982, I sent a short summary. After that I had some correspondence with Lehn in early 1982. But, to the best of my knowledge neither my summary nor Ireland's was ever published. (I checked every issue for two years after 1981 and finally gave up.)

In another attempt to beat the paradigm I tried to repeat my success with Applied Optics. In 1985 I submitted to Applied Optics a paper that presents an optical analysis of a photo which shows a bright "something" nestled in a hole in the clouds. The color slide was taken from an altitude of about 36,000 ft. by a former Royal Canadian Air Force pilot, R. J. Childerhose, in 1955. (It only became available for analysis in 1984, however.) Since this photograph is endorsed by none other than skeptic Philip Klass as being a true unconventional phenomenon (he suggests that it is a huge plasma-like "ball lightning"), I thought naively that I would have no problem getting the article published. However, it has been rejected twice. It was rejected initially because the editor thought it could be a subsun. I explained that the location of the sun was not correct for it to be a subsun. The second reviewer thought that it was actually a reflection of light from a distant lake. Neither of these explanations takes into account the pilot's claim that the phenomenon remained motionless in the clouds as he passed it. I have resubmitted my paper with some new information and analysis, but I am not holding my breath. [Update to 1998: The paper was rejected a third time when the second referee refused to understand that the pilot flew in a straight line past the object, i.e., the sighting angle from the plane to the object rotated to the right, like driving

past a telephone pole, whereas a reflection of the sun in a lake stays in a constant direction relative to the flight path of the aircraft. Also, a solar reflection in a lake as viewed from 36,000 feet, with the sun low on the horizon, is very reddish, whereas the unidentified bright object was very white. The paper was not published in Applied Optics. However, it was published in the Journal of Scientific Exploration (Vol. 13, pg 199, 1999).

Sic Transit Gloria Science.

CONCLUSION

I have tried to demonstrate how science has failed humanity in two ways related to UFO phenomena: First, scientists have been so skeptical of UFO phenomena that they have been willing to propose (and others to accept) explanations which are unconvincing at best and incorrect at worst. Second, scientists have been so skeptical that they haven't allowed publication of the UFO data for rational, open analysis by the general community. That is, since the "early days" scientists have participated in a self-cover-up.

Because UFO articles which argue that something truly unusual is involved are almost always rejected by refereed journals, most of the "non-debunking" articles that scientists see are in the news media (and in UFO organization journals which, however, do not reach many scientists). Such treatments are generally rather shallow and unconvincing. Furthermore, whenever there is a sighting which attracts a lot of interest the news media give equal weight to sighting descriptions and to explanations by "experts," even if the explanations are ridiculous or wrong. The mere fact that explanations are proposed leads the science community to believe that explanations are at least possible.

A prime example or rampant explanation is the New Zealand case of December 31, 1978. Immediate explanations which were widely publicized were Venus (no: sightings were half an hour before Venus rose), Jupiter (no: film evidence proves it wasn't Jupiter), "unburned meteorites" suggested by Sir Bernard Lovell (no: the duration was many minutes, not seconds), refraction of distant lights (no: sightings angles were too far from the horizon or else not in line with any known light sources on the horizon), lights along the coast (no: wrong directions, not bright enough, wrong colors), light reflected from birds (no: bird reflection would be far too dim), and light from a squid boat (no: there was no known boat located near the flight path of the plane and images on the film are not the same as images of a squid boat).

Because so many explanations were offered, some scientists I talked to had concluded that the sightings had been explained. It was only after I spent some time describing what happened that they began to question the accuracy of their initial impressions. From the point of view of most scientists the controversy in the news media over any particular sighting is unconvincing. Therefore, the subject as a whole has been perceived as being of little scientific importance.

Given the "UFO situation" vis a vis science, it is not surprising that I have had difficulty in getting papers published. I expect that my experience is not unique, but others just haven't written about their attempts to publish papers in refereed journals. Yet, as long as the self-cover-up is in force, the science community will remain generally unaware of the "raw deal" scientists have given the UFO subject (and UFO witnesses in particular, since they have

borne the brunt of the attack by scientists who claim UFO sighters are "99 and 44/100 percent kooks").

Things may not be as bleak as they seem. Many of the new generation of scientists are taking a more active interest. It seems that it will be only a matter of time before someone stands up and says "Look, the emperor has no clothes," at which point the ostriches will pull their heads out of the sand and say, "Oh yeah, we knew that all along," After that science will no longer be in default, However, it will have a lot of catching up to do, about 40 [50] years worth). Will that happen soon? Tune in next year in Washington, D.C., and find out. "Forty Years is Long Enough." [Note: the last sentence, written in 1986, refers to the (then) future MUFON Symposium which was held in July, 1987 in Washington, DC. Oddly enough, as I write this in 1998, I can again make the same statement .. "tune in next year", because the 1999 MUFON conference will again be in Washington, DC. But this time the slogan will be "Fifty Years is Too Long".][Note in 2004: How about 55 years is long enough?]

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APPENDIX

Below is the explanation of the C.B. Moore theodolite sighting as presented by Dr. Menzel in FLYING SAUCERS (Harvard University Press, 1953, pg. 31. In this Appendix he refers to an article in LIFE Magazine, April 7, 1952. Anyone looking at the front cover of LIFE would have seen an alluring mix of Marilyn Monroe, with her dress slipping off her shoulders, and flying saucers. THERE IS A CASE FOR INTERPLANETARY SAUCERS, are the words at the upper right of the magazine cover. Inside was a long article about flying saucers based on sightings collected and analyzed by the Air Force. Ten unexplained sightings were described. The third sighting was that of C. B. Moore. Here is the description of the sighting as reported by LIFE:

"...Moore (was) tracking the balloon through the theodolite - a 25 power telescopic instrument which gives degrees of azimuth and elevation (horizontal and vertical position) for any object it is sighted on. At 10:30 AM Moore leaned back from the theodolite to glance at the balloon with his naked eye. Suddenly he saw a whitish elliptical object, apparently much higher than the balloon, and moving in the opposite direction. At once he picked the object up in his theodolite at 45 degrees of elevation and 210 deg. of azimuth and tracked it east at the phenomenal rate of 5 deg. of azimuth change per second as it dropped swiftly to an elevation of 25 deg. The object appeared to be an ellipsoid roughly two and a half times as long as it was wide. Suddenly it swung abruptly upward and rushed out of sight in a few seconds. Moore had tracked it for 60 seconds altogether..."

Note that the magazine report has included some salient features of the report but missing are Moore's specific statements regarding the passage of the balloon "through" the direction to the sun and his statement about the final azimuth. Hence the typical reader, with no access to Moore's report, would not know of the large final angle between the initial and final azimuth angles. However the astute reader could deduce that there was a large change in azimuth from the statements that the direction changed at a rate of 5 degrees per second and that the object was visible for about 60 seconds. The astute reader would also deduce that the change in angular elevation was at least 20 degrees (45 deg to 25 deg) However, the failure of LIFE to completely report the available information gave Menzel "wiggle room" to generate a theory to explain the sighting. As you read the following keep in mind the fact that Menzel, unlike most other people, had access to the official file on this sighting. The following is Menzel's version of the sighting.)

"One other daytime object, also reported by LIFE, relates to observations of a mysterious occurrence on 24 April 1949. It is one of the best-authenticated of all saucer sightings. The phenomenon apparently had been observed under similar circumstances on several different occasions. On the day in question, a group of technicians, during the preliminaries of launching a "skyhook" balloon, sent up a small weather balloon in order to check the wind drift and other meteorological factors. Charles B. Moore, Jr., was tracking the weather balloon with a theodolite, an instrument that the surveyor uses to measure angles around the horizon and elevations above the surface of the earth. As Moore leaned back to check the balloon with his eye, he suddenly noticed a white, oval object, distinct from the balloon and very much higher. Returning to his theodolite, he obtained a magnified view of this mysterious object. It looked like a long white sausage, and was rapidly changing its position. It dropped at an enormous speed for nearly a minute and then, without any warning, veered its course and sped upward, disappearing in a matter of seconds. Moore and his colleagues estimated that the object was 11 miles high, 100 feet long and traveling at 7 miles a second.

"This and similar sightings in no way implied the presence of some mysterious saucer from interplanetary space, hovering 'curiously' around our experiments and rushing off to report its findings to some interplanetary committee on astronautics. Rather, it was a mirage not unlike that observed to hover near the secret plane, though formed in somewhat different manner.

"This incident, kept in the classified files for more than two years, presents no serious difficulty to the person who understands the optics of the earth's atmosphere. The air can, under special conditions, produce formations similar to lenses. And, just as a burning glass can project the sun into a point of light, so can these lenses of air, imperfect though they are, form an image. What Moore saw was an out-of-focus and badly astigmatic image of the balloon

above. If you happen to wear fairly strong lenses in your glasses, whether you are nearsighted or farsighted, take them off and hold them at arm's length and try to view a distant, luminous object like a candle, electric light, or streetlamp. You will see, far beyond the real object and at a considerable angle to it, an apparent image of the candle itself. As you move the lens, the image will appear to maneuver. As mentioned earlier, we here have to defer the discussion of how lenses of air play an important role in the formation of many varieties of flying saucers. We must remember that these lenses are crooked and bent, and often "dirty" as well. The dirt consists of layers of dust or fog between us and the object at which we are looking. No wonder that sometimes we get a distorted view, and imagine that the saucers we see are real!

"The atmospheric waves that produce the shadow bands and cause stars to twinkle are most intense at the boundary between layers of cold and warm air. The differences of refractive index between such layers can produce distorted images of objects seen through the wavy surface. These distortions can, theoretically at least, be sensibly increased when a layer of cold air lies above a warm one. A weather balloon breaking through the top of the inversion will carry with it a bubble of hot air. The overlying cold layer will sag into the hotter level and momentarily act like a big lens, focusing whatever happens to be above it. Thus it may produce a distorted image of the balloon."

"This phenomenon, I believe, can explain the peculiar balloon effect reported and previously mentioned in Chapter 3 as the mysterious sausage-shaped saucer snooping around our balloon experiments. I understand that similar ghosts have also accompanied some of the ascending V-2 rockets. The phenomenon is entirely a natural one and not too complicated optically. Calculations show that the known difference in temperature between the two layers can produce the imaging effect."

(Dr. Menzel included an appendix to his paper where he presented the mathematical theory of his "atmospheric bubble" explanation. He included a small sketch showing a person looking up at a balloon and just beneath the balloon is the distorted mirage. This sketch was clearly an effort to convince the reader with no access to the actual story (most readers!) that the balloon and the UFO were always in the same azimuth direction and only differed in apparent altitude. He mathematically demonstrated that there might be as much as, but no more than, 1/2 degree between the direction to the actual balloon and the direction to the mirage.)

COMMENT BY THIS AUTHOR: Note that Menzel made reference to classified UFO files. He had access to those files, so he knew the complete story of the sighting. The atmospheric theory you have just read verges on completely fraudulent science when applied to the C. B. Moore sighting. The largest angle between the real balloon and a mirage of the type suggested by Menzel, a mirage resulting from a depression or "dent" in an atmospheric layer, would be a small fraction of a degree, as Menzel demonstrated in his calculation. This is the size of angle which causes star twinkling and slight displacements in position of distant lights, angles which are so small they can only be detected in a telescope. However, as pointed out in the Moore's report, the measured angle between the balloon and the UFO quickly grew to many degrees, far beyond anything allowed by Menzel's theory. The inexperienced reader would probably not have realized the immense disparity between Menzel's calculated maximum angle between the balloon and the mirage and the actual maximum angle.

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