

LA FUERZA AEREA DE LOS ESTADOS UNIDOS Y LA UFOLOGIA

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During the course of the last several weeks I have noticed an ongoing thread concerning the USAF's teaching a course on UFOs at the USAF Academy two decades ago. Five years or so ago I transcribed the text from the "Introductory Space Science, Vol. II, Physics textbook. I think youall should find it interesting.

Don Ecker
UFO Magazine

THE UNITED STATES AIR FORCE AND UFOLOGY

For years now, the debate between debunkers and skeptics as opposed to believers has raged on over whether the United States Government, or more specifically the United States Air Force considers the subject of UFOlogy to be serious business. Also what must be considered is what elements or departments of the government would be concerned with this if UFO's proved to be a threat.

The United States Air Force has maintained for over forty years that the largest percentage of reports are explainable, and most usually are. However, the Air Force also maintains that the rest could be explained if only enough information were present. Is this true, or is it a smoke screen as many researchers maintain? And, what if anything does the Air Force tell its own officer corps that may be presented with this enigma in the course of their duty?

The following document is taken verbatim from the United States Air Forces Academy textbook, " Introductory Space Science, Volume II, Department of Physics, USAF. " This is the volume that was being used by the Air Force Academy, at Colorado Springs, Colorado. The Air Force

Academy has since pulled this volume from the curriculum in the very early 70's, because of the controversy it generated, but after reading this, I think you will find that the United States Air Force has considered the subject of UFOlogy to be very "serious business."

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INTRODUCTORY SPACE SCIENCE - VOLUME II

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CHAPTER XIII

UNIDENTIFIED FLYING OBJECTS

What is an Unidentified Flying Object (UFO)? Well, according to United

States Air Force Regulation 80-17 (dated 19 September 1966), a UFO is

"Any" aerial Phenomenon or object which is unknown or appears to be out of the ordinary to the observer." This is a very broad definition which applies equally well to one individual seeing his first noctiluent cloud at twilight as it does to another individual seeing his first helicopter.

However, at present most people consider the term UFO to mean an object which behaves in a strange or erratic manner while moving through the Earth's atmosphere. That strange phenomenon has evoked strong emotions and great curiosity among a large segment of our world's population. The average person is interested because he loves a mystery, the professional military man is involved because of the possible threat to national security, and some scientist are interested because of the basic curiosity that led them into becoming researchers.

The literature on UFO's is so vast, and the stories so many and varied, that we can only present a sketchy outline of the subject in this chapter. That outline includes description classifications, operational domains (temporal and spatial), some theories as to the nature of the UFO phenomenon, human reactions, attempts to attack the problem scientifically, and some tentative conclusions. If you wish to read further in this area, the references provide an excellent starting point.

33.1 DESCRIPTIONS

One of the greatest problems you encounter when attempting to catalog UFO sightings, is selection of a system for cataloging. No effective system has yet been devised, although a number of different systems have been proposed. The net result is that almost all UFO data are either treated in the form of individual cases, or in the forms of inadequate classification systems. However, these systems do tend to have some common factors, and a collection of these factors is as follows:

- a. Size
- b. Shape (disc, ellipse, football, etc.)
- c. Luminosity
- d. Color
- e. Number of UFO's

Behavior:

- a. Location (altitude, direction, etc.)
- b. Patterns of paths (straight line, climbing, zig-zagging, etc.)
- c. Flight Characteristics (wobbling, fluttering, etc.)
- d. Periodicity of sightings
- e. Time duration
- f. Curiosity or inquisitiveness
- g. Avoidance
- h. Hostility

Associated Effects:

- a. Electro-Magnetic (compass, radio, ignition systems, etc.)
- b. Radiation (burns, induced radioactivity, etc.)
- c. Ground disturbance (dust stirred up, leaves moved, standing wave peaks of surface of water, etc.)
- d. Sound (none, hissing, humming, roaring, thunderclaps, etc.)
- e. Vibration (weak, strong, slow, fast)
- f. Smell (ozone or other odor)
- g. Flame (how much, where, when, color)
- h. Smoke or cloud (amount, color, persistence)
- i. Debris (type, amount, color, persistence)
- j. Inhibition of voluntary movement by observers
- k. Sighting of "creatures" or "beings"

After Effects:

- a. Burned areas or animals
- b. depressed or flattened areas
- c. Dead or "missing animals"
- d. Mentally disturbed people
- e. Missing items

We make no attempt here to present available data in terms of the foregoing descriptors.

33.2 OPERATIONAL DOMAINS - TEMPORAL AND SPATIAL

What we will do here is to present evidence that UFO's are a global phenomenon which may have persisted for many thousands of years. During this discussion, please remember that the more ancient the reports the less sophisticated the observer. Not only were the ancient observers lacking the terminology necessary to describe complex devices (such as present day helicopters) but they were also lacking the concepts necessary to understand the true nature of such things as television, spaceships, rockets, nuclear weapons and radiation effects. To some, the most advanced technological concept was a war chariot with knife blades attached to the wheels. By the same token, the very lack of accurate terminology and descriptions leaves the more ancient reports open to considerable misinterpretation, and it may well be that present evaluations of individual reports are completely wrong. Nevertheless, let us start with an intriguing story in one of the oldest chronicles of India. . . . the Book of Dzyan.

The book is a group of "story-teller" legends which were finally gathered in manuscript form when man learned to write. One of the stories is of a small group of beings who supposedly came to Earth many thousands of years ago in a metal craft which orbited the Earth several times before landing. As told in the Book "These beings lived to themselves and were revered by the humans among whom they had settled. But eventually differences arose among them and they divided their numbers, several of the men and women and some children settled in another city, where they were promptly installed as rulers by the awe-stricken populace.

"Separation did not bring peace to these people and finally their anger reached a point where the ruler of the original city took with him a small number of his warriors and they rose into the air in a huge shining metal vessel. While they were many leagues from the city of their enemies, they launched a great shining lance that rode on a beam of light. It burst apart in the city of their enemies with a great ball of flame that shot up to the heavens, almost to the stars. All those who were in the city were horribly burned and even those who were not in the city - but nearby - were burned also. Those who looked upon the lance and the ball of fire were blinded forever afterward. Those who entered the city on foot became ill and died. Even the dust of the city was poisoned, as were the rivers that flowed through it. Men dared not go near it, and it gradually crumbled into dust and was forgotten by men."

"When the leader saw what he had done to his own people he retired to his palace and refused to see anyone. Then he gathered about him those warriors who remained, and their wives and children, and they entered their vessels and rose one by one into the sky and sailed away. Nor did they return."

Could this foregoing legend really be an account of an extraterrestrial colonization, complete with guided missile, nuclear warhead and radiation

effects? It is difficult to assess the validity of that explanation...just as it is difficult to explain why Greek, Roman and Nordic Mythology all discuss wars and contacts among their "Gods." (Even the Bible records conflict between the legions of God and Satan.) Could it be that each group recorded their parochial view of what was actually a global conflict among alien colonists or visitors? Or is it that man has led such a violent existence that he tends to expect conflict and violence among even his gods?

Evidence of perhaps an even earlier possible contact was uncovered by Tschütscher of the University of Peking. He discovered astonishing carvings in granite on a mountain in Hunan Province and on an island in Lake Tungting. These carvings have been evaluated as 47,000 years old, and they show people with large trunks (breathing apparatus?...or "elephant" heads shown on human bodies? Remember, the Egyptians often represented their gods as animal heads on human bodies.)

Only 8,000 years ago, rocks were sculpted in the Tassili plateau of

Sahara, depicting what appeared to be human beings but with strange round heads (helmets? or "sun" heads on human bodies?) And even more recently, in the Bible, Genesis (6:4) tells of angels from the sky mating with women of Earth, who bore them children. Genesis 19:3 tells of Lot meeting two angels in desert and his later feeding them at his house. The Bible also tells a rather unusual story of Ezekiel who witnessed what has been interpreted by some to have been a spacecraft or aircraft landing near the Chebar River in Chaldea (593 B.C.).

Even the Irish have recorded strange visitations. In the *Speculum Regali in Konungs Skuggsa* (and other accounts of the era about 956 A.D.) are numerous stories of "demonships" in the skies. In one case a rope from one such ship became entangled with part of a church. A man from the ship climbed down the rope to free it, but was seized by the townspeople.

The Bishop made the people release the man, who climbed back to the ship, where the crew cut the rope and the ship rose and sailed out of sight. In all of his actions, the climbing man appeared as if he were swimming in water. Stories such as this makes one wonder if the legends of the "little people" of Ireland were based upon imagination alone.

About the same time, in Lyons (France) three men and a women supposedly descended from an airship or spaceship and were captured by a mob. These foreigners admitted to being wizards, and were killed. (No mention is made of the methods employed to extract the admissions.) Many documented

UFO sightings occurred throughout the Middle Ages, including an especially startling one of a UFO over London on 16 December 1742. However, we do not have room to include any more of the Middle Ages sightings. Instead, two "more-recent" sightings are contained in this section to bring us up to modern times.

In a sworn statement dated 21 April 1897, a prosperous and prominent

farmer named Alexander Hamilton (Le Roy, Kansas, U.S.A.) told of an attack upon his cattle at about 10:30 PM the previous Monday. He, his son, and his tenant grabbed axes and ran some 700 feet from the house to the cow lot where a great cigar-shaped ship about 300 feet long floated some 30 feet above his cattle. It had a carriage underneath which was brightly lighted within (dirigible and gondola?) and which had numerous windows. Inside were six strange looking beings jabbering in a foreign language. These beings suddenly became aware of Hamilton and the others. They immediately turned a searchlight on the farmer, and also turned on some power which sped up a turbine wheel (about 30 ft diameter) located under the craft. The ship rose, taking with it a two-year old heifer which was roped about the neck by a cable of one-half inch thick, red material. The next day a neighbor, Link Thomas, found the animal's hide, legs and head in his field. He was mystified at how the remains got to where they were because of the lack of tracks in the soft soil. Alexander Hamilton's sworn statement was accompanied by an affidavit as to his veracity. The affidavit was signed by ten of the local leading citizens.

On the evening of 4 November 1957 at Fort Itaipu, Brazil, two sentries noted a "new star" in the sky. The "star" grew in size and within seconds stopped over the fort. It drifted slowly downward, was as large as a big aircraft, and was surrounded by a strong orange glow. A distinct humming sound was heard, and then the heat struck. A Sentry collapsed almost immediately, the other managed to slide to shelter under the heavy cannons where his loud cries awoke the garrison. While the troops were scrambling towards their battle stations, complete electrical failure occurred. There was panic until the lights came back on but a number of men still managed to see an orange glow leaving the area at high speed. Both sentries were found badly burned...one unconscious and the other incoherent, suffering from deep shock.

Thus, UFO sightings not only appear to extend back to 47,000 years through time but also are global in nature. One has the feeling that this phenomenon deserves some sort of valid scientific investigation, even if it is a low level effort.

33.3 SOME THEORIES AS TO THE NATURE OF THE UFO PHENOMENON

There are very few cohesive theories as to the nature of UFO's. Those theories that have been advanced can be collected in five groups:

- a. Mysticism
- b. Hoaxes, and rantings due to unstable personalities
- c. Secret Weapons
- d. Natural Phenomena
- e. Alien visitors

Mysticism

It is believed by some cults that the mission of UFO's and their crews is a spiritual one, and that all materialistic efforts to determine the UFO's nature are doomed to failure.

HOAXES AND RANTINGS DUE TO UNSTABLE PERSONALITIES

Some have suggested that all UFO reports were the results of pranks and hoaxes, or were made by people with unstable personalities. This attitude was particularly prevalent during the time period when the Air Force investigation was being operated under the code name of Project Grudge. A few airlines even went as far as to ground every pilot who reported seeing a "flying saucer." The only way for the pilot to regain flight status was to undergo a psychiatric examination. There was a noticeable decline in pilot reports during this time interval, and a few interpreted this decline to prove that UFO's were either hoaxes or the result of unstable personalities. It is of interest that NICAP (The National Investigations Committee on Aerial Phenomena) even today still receives reports from commercial pilots who neglect to notify either the Air Force or their own airline.

There are a number of cases which indicate that not all reports fall in the hoax category. We will examine one such case now. It is the Socorro, New Mexico sighting made by police Sergeant Lonnie Zamora. Sergeant Zamora was patrolling the streets of Socorro on 24 April 1964 when he saw a shiny object drift down into an area of gullies on the edge of town. He also heard a loud roaring noise which sounded as if an old dynamite shed located out that way had exploded. He immediately radioed police headquarters, and drove out toward the shed. Zamora was forced to stop about 150 yards away from a deep gully in which there appeared to be an overturned car. He radioed that he was investigating a possible wreck, and then worked his car up onto the mesa and over toward the edge of the gully. He parked short, and when he walked the final few feet to the edge, he was amazed to see that it was not a car but instead was a weird eggshaped object about fifteen feet long, white in color and resting on short, metal legs. Beside it, unaware of his presence were two humanoids dressed in silvery coveralls. They seemed to be working on a portion of the underside of the object. Zamora was still standing there, surprised, when they suddenly noticed him and dove out of sight around the object. Zamora also headed the other way, back toward his car.

He glanced back at the object just as a bright blue flame shot down from the underside. Within seconds the eggshaped thing rose out of the gully with "an earsplitting roar." The object was out of sight over the nearby mountains almost immediately, and Sergeant Zamora was moving the opposite direction almost as fast when he met Sergeant Sam Chavez who was responding to Zamora's earlier radio calls. Together they investigated the gully and found the bushes charred and still smoking where the blue flame had jetted down on them. About the charred area

were four deep marks where the metal legs had been. Each mark was three and one half inches deep, and was circular in shape. The sand in the gully was very hard packed so no sign of the humanoids' footprints could be found. An official investigation was launched that same day, and all data obtained supported the stories of Zamora and Chavez. It is rather difficult to label this episode a hoax, and it is also doubtful that both Zamora and Chavez shared portions of the same hallucination.

SECRET WEAPONS

A few individuals have proposed that UFO's are actually advanced weapon systems, and that their natures must not be revealed. Very few people accept this as a credible suggestion.

NATURAL PHENOMENA

It has also been suggested that at least some, and possibly all of the UFO cases were just mis-interpreted manifestations of natural phenomena. Undoubtedly this suggestion has some merit. People have reported, as UFO's, objects which were conclusively proven to be balloons (weather and skyhook), the planet Venus, man-made artificial satellites, normal aircraft, unusual cloud formations, and lights from ceilometers (equipment projecting light beams on cloud bases to determine the height of the aircraft visual ceiling). It is also suspected that people have reported mirages, optical illusions, swamp gas and ball lightning (a poorly-understood discharge of electrical energy in a spheroidal or ellipsoidal shape...some charges have lasted for up to fifteen minutes but the ball is usually no bigger than a large orange.) But it is difficult to tell a swamp dweller that the strange, fast-moving light he saw in the sky was swamp gas; and it is just as difficult to tell a farmer that a bright UFO in the sky is the same ball lightning that he has seen rolling along his fence wires in dry weather. Thus accidental mis-identification of what might well be natural phenomena breeds mistrust and disbelief; it leads to the hasty conclusion that the truth is deliberately not being told. One last suggestion of interest has been made, that the UFO's were plasmoids from space...concentrated blobs of solar wind that succeeded in reaching the surface of the Earth. Somehow this last suggestion does not seem to be very plausible; perhaps because it ignores such things as penetration of Earth's magnetic field.

ALIEN VISITORS

The most stimulating theory for us is that the UFO's are material objects which are either "Manned" or remote-controlled by beings who are alien to this planet. There is some evidence supporting this viewpoint. In addition to police Sergeant Lonnie Zamora's experience, let us consider the case of Barney and Betty Hill. On a trip through New England they lost two hours on the night of 19 September 1961 without

even realizing it. However, after that night both Barney and Betty began developing psychological problems which eventually grew sufficiently severe that they submitted themselves to psychiatric examination and treatment.

During the course of treatment hypnotherapy was used, and it yielded remarkably detailed and similar stories from both Barney and Betty. Essentially they had been hypnotically kidnapped, taken aboard a UFO, submitted to two-hour physicals, and released with posthypnotic suggestions to forget the entire incident. The evidence is rather strong that this is what the Hills, even in their subconscious, believe happened to them. And it is of particular importance that after the "posthypnotic block" was removed, both of the Hills ceased having their psychological problems.

The Hill's description of the aliens was similar to descriptions provided in other cases, but this particular type of alien appears to be in the minority. The most commonly described alien is about three and one half feet tall, has a round head (helmet?), arms reaching to or below his knees, and is wearing a silvery space suit or coveralls. Other aliens appear to be essentially the same as Earthmen, while still others have particularity wide (wrap around) eyes and mouths with very thin lips. And there is a rare group reported as about four feet tall, weight of around 35 pounds, and covered with thick hair or fur (clothing?). Members of this last group are described as being extremely strong. If such beings are visiting Earth, two questions arise: 1) why haven't they attempted to contact us officially? The answer to the first question may exist partially in Sergeant Lonnie Zamora's experience, and may exist partially in the Tunguska meteor discussed in Chapter XXIX. In that chapter it was suggested that the Tunguska meteor was actually a comet which exploded in the atmosphere, the ices melted and the dust spread out. Hence, no debris. However, it has also been suggested that the Tunguska meteor was actually an alien spacecraft that entered the atmosphere too rapidly, suffered mechanical failure, and lost its power supply and/or weapons in a nuclear explosion. While that hypothesis may seem far fetched, sample of tree rings from around the world reveal that, immediately after the Tunguska meteor explosion, the level of radioactivity in the world rose sharply for a short period of time. It is difficult to find a natural explanation for that increase in radioactivity, although the suggestion has been advanced that enough of the meteor's great Kinetic energy was converted into heat (by atmospheric friction) that a fusion reaction occurred. This still leaves us with no answer to the second question: why no contact? That question is very easy to answer in several ways: 1) we may be the object of intensive sociological and psychological study.

In such studies you usually avoid disturbing the test subjects' environment; 2) you do not "contact" a colony of ants, and humans may seem that way to any aliens (variation: a zoo is fun to visit, but you don't "contact" the lizards); 3) such contact may have already taken place secretly; and 4) such contact may have already taken place on a different plane of awareness and we are not yet sensitive to communications on such a plane. These are just a few of the reasons. You may add to the list as you desire.

33.4 HUMAN FEAR AND HOSTILITY

Besides the foregoing reasons, contacting humans is downright dangerous. Think about that for a moment! On the microscopic level our bodies reject and fight (through production antibodies) any alien material; this process helps us fight off disease but it also sometimes results in allergic reactions to innocuous materials. On the macroscopic (psychological and sociological) level we are antagonistic to beings that are "different". For proof of that, just watch how an odd child is treated by other children, or how a minority group is socially deprived, or how the Arabs feel about the Israelis (Chinese vs Japanese, Turks vs Greeks, etc.) In case you are hesitant to extend that concept to the treatment of aliens let me point out that in very ancient times, possible

extraterrestrials may have been treated as Gods but in the last two thousand years, the evidence is that any possible aliens have been ripped apart by mobs, shot and shot at, physically assaulted, and in general treated with fear and aggression.

In Ireland about 1,000 A.D., supposed airships were treated as

"demonships." In Lyons, France, "admitted" space travellers were killed. More recently, on 24 July 1957 Russian anti-aircraft batteries on the Kouril Islands opened fire on UFO's. Although all Soviet anti-aircraft batteries on the Islands were in action, no hits were made. The UFO's were luminous and moved very fast. We too have fired on UFO's. About ten o'clock one morning, a radar site near a fighter base picked up a UFO doing 700 mph. The UFO then slowed to 100 mph, and two F-86's were scrambled to intercept. Eventually one F-86 closed on the UFO at about 3,000 feet altitude. The UFO began to accelerate away but the pilot still managed to get within 500 yards of the target for a short period of time. It was definitely saucer shaped. As the pilot pushed the F-86 at top speed, the UFO began to pull away. When the range reached 1,000 yards, the pilot armed his guns and fired in an attempt to down the saucer. He failed, and the UFO pulled away rapidly, vanishing in the distance. This same basic situation may have happened on a more personal level. On Sunday evening 21 August 1955, eight adults and three children were on the Sutton Farm (one-half mile from Kelly, Kentucky) when, according to them, one of the children saw a brightly glowing UFO settle behind the barn, out of sight from where he stood. Other witnesses on nearby farms also saw the object. However, the Suttons dismissed it as a "shooting star", and did not investigate. Approximately thirty minutes later (at 8:00 pm), the family dogs began barking so two of the men went to the back door and looked out. Approximately 50 feet away and coming toward them was a creature wearing a glowing silvery suit. It was about three and one-half feet tall with a large round head and very long arms.

It had large webbed hands which were equipped with claws. The two Suttons grabbed a twelve gauge shotgun and a .22 caliber pistol, and fired at close range. They could hear the pellets and bullet ricochet as if off of metal. The creature was knocked down, but jumped up and scrambled away. The Suttons retreated into the house, turned off all

inside lights, and turned on the porch light. At that moment, one of the women who was peeking out of the dining room window discovered that a creature with some sort of helmet and wide slit eyes was peeking back at her. She screamed, the men rushed in and started shooting. The creature was knocked backwards but again scrambled away without apparent harm.

More shooting occurred (a total of about 50 rounds) over the next 20 minutes and the creatures finally left (perhaps feeling unwelcome?) After about a two hour wait (for safety), the Suttons left too. By the time the police got there, the aliens were gone but the Suttons would not move back to the farm. They sold it and departed. This reported incident does bear out the contention though that humans are dangerous. At no time in the story did the supposed aliens shoot back, although one is left with the impression that the described creatures were having fun scaring humans.

33.5 ATTEMPTS AT SCIENTIFIC APPROACHES

In any scientific endeavor, the first step is to acquire data, the second step to classify the data, and the third step to form hypothesis. The hypothesis are tested by repeating the entire process, with each cycle resulting in an increase in understanding (we hope). The UFO phenomenon does not yield readily to this approach because the data taken so far exhibits both excessive variety and vagueness. The vagueness is caused in part by the lack of preparation of the observer...very few people leave their house knowing that they are going to see a UFO that evening.

Photographs are overexposed or underexposed, and rarely in color. Hardly anyone carries around a radiation counter or magnetometer. And, in addition to this, there is a very high level of "noise" in the data.

The noise consists of mistaken reports of known natural phenomena, hoaxes, reports by unstable individuals and mistaken removal of data regarding possible unnatural or unknown natural phenomena (by overzealous individuals who are trying to eliminate all data due to known natural phenomena). In addition, those data, which do appear to be valid, exhibit an excessive amount of variety relative to the statistical samples which are available. This has led to very clumsy classification systems, which in turn provide quite unfertile ground for formulation of hypothesis.

One hypothesis which looked promising for a time was that of ORTHOTENY (i.e., UFO sightings fall on "great circle" routes). At first, plots of sightings seemed to verify the concept of orthoteny but recent use of computers has revealed that even random numbers yield "great circle" plots as neatly as do UFO sightings.

There is one solid advance that has been made though. Jacques and Janine Vallee have taken a particular type of UFO - namely those that are lower than tree-top level when sighted -and plotted the UFO's estimated

diameter versus the estimated distance from the observer. The result yields an average diameter of 5 meters with a very characteristic drop for short viewing distances. This behavior at the extremes of the curve is well known to astronomers and psychologists as the "moon illusion." The illusion only occurs when the object being viewed is a real, physical object. Because this implies that the observers have viewed a real object, it permits us to accept also their statement that these particular UFO's had a rotational axis of symmetry.

Another, less solid, advance made by the Vallee's was their plotting of the total number of sightings per week versus the date. They did this for the time span from 1947 to 1962, and then attempted to match the peaks of the curve (every 2 years 2 months) to the times of Earth-Mars conjunction (every 2 years 1.4 months). The match was very good between 1950 and 1956 but was poor outside those limits. Also, the peaks were not only at the times of Earth-Mars conjunction but also roughly at the first harmonic (very loosely, every 13 months). This raises the question why should UFO's only visit Earth when Mars is in conjunction and when it is on the opposite side of the sun. Obviously, the conjunction periodicity of Mars is not the final answer. As it happens, there is an interesting possibility to consider. Suppose Jupiter's conjunctions were used; they are every 13.1 months. That would satisfy the observed periods nicely, except for every even data peak being of different magnitude from every odd data peak. Perhaps a combination of Martian, Jovian, and Saturnian (and even other planetary) conjunctions will be necessary to match the frequency plot...if it can be matched.

Further data correlation is quite difficult. There are a large number of different saucer shapes but this may mean little. For example, look at the number of different types of aircraft which are in use in the U. S. Air Force alone.

It is obvious that intensive scientific study is needed in this area; no such study has yet been undertaken at the necessary levels of intensity needed. Something that must be guarded against in any such study is the trap of implicitly assuming that our knowledge of Physics (or any other branch of science) is complete. An example of one such trap is selecting a group of physical laws which we now accept as valid, and assume that they will never be superseded.

Five such laws might be:

- 1) Every action must have an opposite and equal reaction.
- 2) Every particle in the universe attracts every other particle with a force proportional to the product of the masses and inversely as the square of the distance.
- 3) Energy, mass and momentum are conserved.
- 4) No material body can have a speed as great as c , the speed of light in free space.
- 5) The maximum energy, E , which can be obtained from a body at rest is $E=mc^2$, where m is the rest mass of the body.

Laws numbered 1 and 3 seem fairly safe, but let us hesitate and take another look. Actually, law number 3 is only valid (now) from a

relativistic viewpoint; and for that matter so are laws 4 and 5. But relativity completely revised these physical concepts after 1915, before then Newtonian mechanics were supreme. We should also note that general relativity has not yet been verified. Thus we have the peculiar situation of five laws which appear to deny the possibility of intelligent alien control of UFO's, yet three of the laws are recent in concept and may not even be valid. Also, law number 2 has not yet been tested under conditions of large relative speeds or accelerations. We should not deny the possibility of alien control of UFO's on the basis of preconceived notions not established as related or relevant to the UFO's.

33.6 CONCLUSION

>From available information, the UFO phenomenon appears to have been global in nature for almost 50,000 years. The majority of known witnesses have been reliable people who have seen easily-explained natural phenomena, and there appears to be no overall positive correlation with population density. The entire phenomenon could be psychological in nature but that is quite doubtful. However, psychological factors probably do enter the data picture as "noise." The phenomenon could also be entirely due to known and unknown phenomena (with some psychological "noise" added in) but that too is questionable in view of some of the available data.

This leaves us with the unpleasant possibility of alien visitors to our planet, or at least of alien controlled UFO's. However, the data are not well correlated, and what questionable data there are suggest the existence of at least three and maybe four different groups of aliens (possibly at different states of development). This too is difficult to accept. It implies the existence of intelligent life on a majority of the planets in our solar system, or a surprisingly strong interest in Earth by members of other solar systems.

A solution to the UFO problem may be obtained by the long and diligent effort of a large group of well financed and competent scientists, unfortunately there is no evidence suggesting that such an effort is going to be made. However, even if such an effort were made, there is no guarantee of success because of the isolated and sporadic nature of the sightings. Also, there may be nothing to find, and that would mean a long search with no profit at the end. The best thing to do is to keep an open and skeptical mind, and not take an extreme position on any side of the question.