

# THE SCIENCE OF UFOs: FACTS VS. STEREOTYPES

## THE SCIENCE OF UFOs: FACTS VS. STEREOTYPES

By Richard H. Hall

---

*"Some of the greatest discoveries...consist mainly in the clearing away of psychological road-blocks which obstruct the approach to reality."  
-- Arthur Koestler in The Sleepwalkers*

Stereotypes die hard. The myth among scientists that UFOs are a "nonsense problem" without any substance was firmly established more than 50 years ago and persists until this day.

Among the deeply embedded misconceptions of scientists are:

1. UFOs are nothing but vague fleeting lights seen at night,
2. No trained or experienced observers have reported truly puzzling UFOs,
3. UFOs are prosaic objects or phenomena that are converted into spaceships by "believers,"
4. A religious-like "will to believe" in salvation from the outside drives the entire UFO phenomenon, and
5. Nothing of substance has been reported that science could investigate even if it wanted to.

These notions all are demonstrably false. They are "psychological road-blocks" that need to be cleared away so that discovery of UFOs can proceed. The cases used as illustrations in this report are chosen partly to refute the stereotypes and partly to show the recurring patterns and observational details, with special emphasis on the numerous areas of potential scientific research that would be possible if UFOs were accepted as a real phenomenon and funding were available.

In strong contrast to the prevailing stereotypes, if the witnesses in cases like these could be subpoenaed to testify under oath in a fact-finding setting, the cases have the potential to establish beyond a reasonable doubt not only that UFOs are "real," but also that they have, with high probability, extraordinary significance to science and the human species. Strong human testimony establishes clearly that the structured UFOs featured here are a product of technology, not a natural phenomenon. The only remaining question is: Whose technology?

### Structured (Craft-Like) Objects & Tangible Effects

The same scientific issues arose during the University of Colorado UFO Project (the "Condon Committee") in 1966-1969, to which the author was a consultant. The Committee decided that so-called "solid objects" (as opposed to point sources or balls of light) ought to be the focus of attention. These better witnessed, more detailed reports of solid, structured, geometrical--indeed, craft-like--objects would focus on whatever is likely to be real in the UFO phenomenon.

Similarly, study of the reported tangible effects of UFOs (e.g., environmental effects, electromagnetic effects, physical trace cases, physiological effects) should shed light on the nature of the phenomenon. Another potentially important area of inquiry is the possible clues to the physics and technology of UFOs that are commonly present in the reports.

The large majority of UFOs seen clearly in daylight or when illuminated at night are described as elliptical, oval, discoidal, cigar-shaped, or top-shaped. In mathematical language, these are the so-called "solids of revolution." Note the examples of shape, tangible effects, and other indicators of technology in the following cases.

May 1, 1952; Davis-Monthan AFB, Arizona; 9:10 a.m.

Witnesses: Major Rudy Pestalozzi, an intelligence officer, and an airman

Features: Discs, coordinated flight, vehicle pacing

Two shiny discs overtook a B-52 bomber and paced alongside, one close to the fuselage. The bomber crew crowded into the starboard blister aft of the wing and looked down at a slight angle to see the closest disc, which was lens- or double-disc-shaped and about 20-25 feet in diameter. After about 20 seconds, the objects peeled off at a sharp angle and sped away. The flight commander, startled by the experience, made an unscheduled landing at the base and the crew was interrogated at length by Major Pestalozzi, who happened to be the base UFO

officer. (Hynek, 1977, pp. 109-112, 292-294; McDonald files, University of Arizona library; Project Blue Book files, National Archives.)

Aug. 13, 1960; Red Bluff, California; 11:50 p.m.

Witnesses: Officer Charles A. Carson, Officer Stanley Scott, California Highway Patrol; Tehama County sheriff's deputies; Air Force radar

Features: Ellipse, body lights, red light beams sweeping ground, extraordinary maneuvers, radar contact, E-M effects on radio

Officers Carson and Scott while on patrol observed a large object low in the sky directly ahead of them which they thought was an airliner about to crash. They stopped and leaped from the patrol car to get a position fix, but they heard no sound. When the object reached a position about 100-200 feet off the ground, it abruptly reversed direction and shot back up to about 500 feet and stopped. The officers saw the shape clearly illuminated by a surrounding glow. It was a silvery ellipse with red lights at each extremity. Between the two red lights about five white lights were appeared occasionally along the center of the object. "As we watched the object moved again and performed aerial feats that were actually unbelievable," Carson wrote in his official report of the incident.

"At this time we radioed Tehama County Sheriff's Office requesting that they contact local radar base," Carson continued. "The radar base confirmed the UFO-- completely unidentified."

They watched the object come directly towards them twice turning and sweeping the area with a huge red light beam. Each time it approached, they experienced radio interference. "Officer Scott turned the red light on the patrol vehicle toward the object, and it immediately went away from us," Carson reported. [In many parallel cases, UFOs have displayed an identical "startle reaction" to police spotlights aimed at them.]

The object flashed the red light beam about 6-7 times, sweeping the sky as well as the ground, then began moving away toward the east. Carson and Scott began to follow it. A second similar object joined the first, and finally both objects disappeared over the eastern horizon.

The officers talked with Deputies Fry and Montgomery of Tehama County, and the night jailer, all of whom had seen exactly what they had. The sighting lasted a little over two hours. (Hall,

1964, p. 61-62)

Apr. 24, 1964; Socorro, New Mexico; 5:45 p.m.

Witnesses: Lonnie Zamora, Socorro police officer; Deputy Sheriff James Luckie; Sgt. Sam Chavez, New Mexico State Police

Features: Ellipse, small beings, leg-like imprints in ground, damage to foliage

Attracted by an apparent explosion, Zamora drove off the highway onto rough roads to investigate. A white object was visible which he first thought was an overturned car, so he reported in to the dispatcher that he would be out of his car "checking the car down in the arroyo." Two small figures were standing near it.

As he got out of his car he heard two or three loud "thumps," like someone hammering or slamming a door. One of the beings turned and looked at him. Then they disappeared into the craft and it took off with a loud roar and blast of flames. Fearing an explosion, Zamora turned to run for cover, stumbled and fell. The object rose straight up, and once it cleared the ground the loud noise stopped. The object, a whitish ellipse with a red symbol-like marking on the side, flew away horizontally. It rose gradually until it disappeared in the distance over the mountains, just clearing Six Mile Canyon Mountain.

When Zamora called to report the incident, the dispatcher directed Sergeant M.S. Chavez of the State Police to the site as back-up. Zamora and Chavez noticed that the underbrush was burning in several places and Chavez spotted the "tracks."

Socorro Deputy Sheriff James Luckie arrived a few minutes after Chavez, and he also confirmed the imprints and the still-smoking foliage. Clearly visible in the sandy soil were four squarish imprints arranged in a trapezoidal pattern. Four burned areas were visible, three of them within the pattern of imprints. Several small, shallow circular indentations also were found; these are labelled "footprints" in the Air Force case file.

A Public Health Service scientist analyzed a patch of fused sand found at the site. The results of this analysis is absent from the official file. (The Air Force case file contains only one qualitative soil sample analysis dated 19 May 1964 that identifies "major elements" but gives no percentages.)

On April 25, Army Captain Richard T. Holder, Up-Range Commander of White Sands Proving Grounds, along with an FBI agent, D. Arthur Byrnes, Jr., from the Albuquerque office, arrived to investigate and take measurements at the site. (Holder, 1964; FBI, 1964)

Major William Connor from Kirtland AFB and Sgt. David Moody, who was in the area on TDY, investigated for Air Force Project Blue Book on April 26. (Connor, 1964) Dr. J. Allen Hynek conducted a follow-up investigation in person on August 15, 1964, finding strongly favorable character references for Zamora. (Hynek, 1964)

Writing in a classified Central Intelligence Agency publication Studies in Intelligence two years later, Hector Quintanilla, Air Force Chief of Project Blue Book at the time of the sighting, reported that the Socorro case remained "puzzling." With the help of many other agencies, he had conducted an exhaustive check of military activities looking for an explanation. He found none.

"There is no doubt," he reported, "that Lonnie Zamora saw an object which left quite an impression on him. There is also no question about Zamora's reliability. He is a serious police officer, a pillar of his church, and a man well versed in recognizing airborne vehicles in his area. He is puzzled by what he saw, and frankly, so are we. This is the best-documented case on record, and still we have been unable, in spite of thorough investigation, to find the vehicle or other stimulus that scared Zamora to the point of panic." (Quintanilla, 1966)

March 5, 1967; Minot AFB, North Dakota; time not reported

Witnesses: Air Force security police and other base personnel

Features: disc, radar visual sighting, flashing body lights, Hover acceleration

Air Defense Command radar tracked an unidentified target descending over the Minuteman missile silos of the 91st Strategic Missile Wing. Base security teams saw a metallic, disc-shaped object ringed with bright flashing lights moving slowly, maneuvering, then stopping and hovering about 500 feet off the ground. After a while the object circled directly over the launch control facility. F-106 fighter-interceptors were scrambled to investigate. At that moment the UFO "climbed straight up and streaked away at incredible speed." (Fowler, 1981, p. 187)

Oct. 18, 1973; Mansfield, Ohio; 11:00 p.m.

Witnesses: Capt. Lawrence J. Coyne and the crew of an Army Reserve UH-1H helicopter; separately located ground witnesses

Features: Cigar-shaped metallic object with dome, body lights, light beam, apparent lifting force, apparent EM effects

The helicopter was cruising at 90 knots at an altitude of 2,500 feet above sea level, over mixed woods and farmland en route from Columbus to Cleveland on a clear starry night. A red light was observed on the eastern horizon that appeared to be pacing the helicopter. A minute or so later one of the crew members warned the captain that the light appeared to be converging on the helicopter. Capt. Coyne took the controls from the copilot and began descending, at the same time contacting Mansfield approach control to request information on possible jet traffic; he knew there were F-100s based at Mansfield. Before Mansfield could answer, radio communications were lost.

Meanwhile the red light increased in intensity and appeared to be on a collision course at a very high rate of speed, so Coyne increased the rate of descent and dropped to about 1,700 feet. With the trees coming up fast and the unknown object apparently about to ram them, the crew members braced for the impact. Just as a collision appeared imminent, the light suddenly stopped and assumed a hovering relationship above and in front of the helicopter.

The object appeared solid, eclipsing the stars behind it. On it were a red light at the nose, a white light at the tail, and a distinctive green beam emanating from the lower part of the body. The green beam swung across the front of the helicopter, through the windshield, bathing the cockpit in intense green light. No turbulence was felt and the crew heard no sound from the object. After a few seconds, the object accelerated and moved off to the west, showing only the white "tail" light as it receded, and made a distinct 45 degree course change to the right, heading toward Lake Erie.

While the object was still visible, Coyne noted that the altimeter read 3,500 feet with a rate of climb of 1,000 feet per minute. Yet the collective (steering mechanism) was still in the full-down position set during his attempt to evade the object. Coyne regained control at an indicated altitude of 3,800 feet. At that point the crew felt a slight "bump." Reviewing his instruments, Coyne noticed that the magnetic compass was rotating slowly, while the Radio Magnetic Indicator was functioning normally. He descended to the previously assigned cruise altitude of 2,500 feet and made radio contact with the Akron/Canton air traffic controllers. This time there was no problem with radio communications.

On the ground, the driver and passengers of a car saw two lights, one red and one green, moving together, coming down rapidly toward them. At first they thought it was a small plane flying low, but the red was too bright, especially compared to the green. They could discern no shape, and heard no sound. As the object approached the car from the right, its unusual qualities caused the driver to pull over and stop. They then became aware of a second group of lights, some of them flashing, approaching from behind them (the southwest) and heard a helicopter-like noise for the first time. The driver thought the two sets of lights were two helicopters about to crash. For a few seconds they watched from the open car windows as the red steady light and the helicopter converged, then some of the passengers got out to watch.

"The one object went over the top of the other one," they reported, "and then it stopped." They described the unidentified object as being "something like a blimp....The helicopter was smaller than the object." After the red-lighted object stopped, the green light flared up. "When we got out, everything was green. I saw that thing and the helicopter....It lit up everything green....It kind of looked like rays coming down." The witnesses agreed that the helicopter was green because of the light shining down from the object above it.

As they continued to watch, the helicopter with the other object above and slightly ahead of it moved in tandem from southwest to northeast. They reported this movement as a backward or zig-zag flight path of the object. Suddenly the green light went out and the object was gone. "When the light went out you couldn't see the object. And then the helicopter went northeast. Then we got back in the car and went on, and saw it [the helicopter] fly out over the lake."

A time-line analysis performed by Jennie Zeidman shows that the unidentified object was continuously in view of the helicopter crew for at least five minutes--possibly six. Both aircrew and ground witnesses testified that the object was precisely shaped and opaque, with distinct edges and no train or trail. That testimony, and the reported maneuvers, absolutely preclude the object's being a meteor. (Zeidman, 1979)

September 1, 1974; Langenburg, Saskatchewan, Canada; 11:00 a.m.

Witnesses: Farmer Edwin Fuhr, 36; Royal Canadian Mounted Police Constable Ron Morier, onsite investigator

Features: Circular (hemispherical) objects, formation, coordinated flight, physical traces, E-M effects, animal reaction

While Fuhr was driving a swather to harvest his rape crop, he noticed a metallic-appearing, dome-shaped object about 50 feet away and stopped to investigate. Walking to within 15 feet

of it, Fuhr saw that it was spinning and swirling the grass beneath it. This frightened him and he backed away. Climbing back on the swather, he looked around and saw four more identical domes "like brushed stainless steel" arranged in a rough semi-circle, all hovering and spinning about a foot above the ground. Whether from fear or an E-M effect, Fuhr could not get the throttle and steering wheel of the swather to respond.

One object suddenly took off, quickly followed by the other four, ascending in a step formation. At about 200 feet they stopped, each emitting a puff of gray vapor from exhaust-like extensions at the base. The vapor extended about six feet, followed by a downward gust of wind which flattened the rape in the immediate area. The objects then formed a straight line, hovered for a min

Fuhr went to the landing area and found five rings of depressed grass swirled in a clockwise fashion. There was no evidence of heat or burning. Some additional circles were found in the area later that month. Fuhr later learned that cattle in a nearby field had bellowed and broken through a fence about the time of the sighting.

Royal Canadian Mounted Police Constable Ron Morier, quoted by Canadian Press, said: "Something was there and I doubt it was a hoax. There's no indication anything had been wheeled in or out and Mr. Fuhr seemed genuinely scared." Later Morier told an investigator, "There is no way that this is a hoax....Whatever was in there, it came out of the air and departed the same way, as far as I could tell." (Phillips, 1975; Rutkowski & Timmerman, 1992)

January 1, 1978; Santa Monica, California; 12:45-1:00 p.m.

Witnesses: Floyd P. Hallstrom (37 years flying experience, as a Navy combat air crewman and personal crew chief to admirals, including the Commander-in-Chief of the Atlantic Fleet)

Features: Disc with dome and portholes, sun reflecting off dome

While flying a Cessna 170A airplane from Oxnard, California, to San Diego, Hallstrom was approaching Santa Monica at 7,500 feet altitude. Ahead of him was a friend, Jim, ferrying a new airplane to San Diego. Hallstrom was following him and was scheduled to transport him back to Oxnard after he delivered the plane. The sky was clear except for a smog layer in the vicinity of Los Angeles International Airport (LAX).

"I spotted [the UFO] just on the edge of the haze area above LAX slightly to the



east side....I thought it was Jim so I watched it for about a minute because he had just given me his position report, but it seemed to get larger and coming toward me so I naturally realized that it wasn't Jim....I started looking to see what it was but I could see no wings on this aircraft although at this time I could see windows which appeared to be passenger windows in the aircraft. As it drew nearer though, I was able to determine that there were no wings or horizontal empennage assembly to the aircraft as a conventional aircraft...."

Hallstrom wondered if it was some kind of helicopter, but it was approaching at high speed. He looked down at an angle of about 30-45 degrees at the UFO as it passed about 6,000 feet to his left. There were no rotors, no tail assembly.

"All of a sudden I was able to make out the complete form of a saucer shape or round object...I could see the dome, also very vividly clear, including all the windows....[I] observed it to be of a very bright metal...it was more of a nickel or highly polished chrome or stainless steel type of metal than aluminum because it had more of a mellow glow than [if] it was of the type finish on a high finish aluminum."

Hallstrom observed 16 to 20 evenly spaced windows around the circumference of the dome, just above the base. The dome appeared to be a perfect hemisphere about 20 feet in diameter resting on the base which was about 30 feet in diameter. The UFO continued on a course of about 310 degrees (opposite to Hallstrom's course) with no sign of rotation, oscillation, pitch, roll, or yaw. Neither was there any sign of a propulsion system. The sun reflected off the dome as a bright spot as the UFO passed. After about a minute the object disappeared from view behind the Cessna. Hallstrom estimated its speed at about 650 m.p.h. He quickly took notes and made a sketch of the UFO.

Reaching for his radio microphone, he first called his friend Jim to report what he had seen. Then he notified various FAA authorities.

Hallstrom, shaken by this sighting, had not taken the subject seriously until now. The implications of what he had seen struck home. He later reported that the experience had altered his entire life. (MUFON UFO Journal, January 1978, pp. 3-5)

Nov. 9, 1978; Kuwait; time not reported

Witnesses: Oil field technicians

Features: Disc with dome, flashing body lights, landing, E-M effects on pumping equipment and communications, photographs

Kuwait Oil Company employees reported a series of UFO sightings from November 9 to November 21, 1978, including alleged photographs in some cases. On November 9, at Gathering Centre No. 24, technicians saw a disc-like object with dome on top on the ground. This coincided with failure of the oil pumping station and interruption of communications. After about 7 minutes the object departed at a rapid speed. The Kuwait Institute for Scientific Research (KISR) conducted an investigation, but could not explain the sightings and considers its report "confidential." When the same or a similar UFO reappeared on November 21, a Kuwait Oil Company employee obtained "...a number of photographs of the object." These were examined by KISR, but their report has never been released. (Private communication from a scientist member of the Kuwait Institute for Scientific Research; Kuwait Times, Nov. 16, 18, 1978; Arab Times, Jan. 24, 1979)

March 4, 1988; Eastlake, Ohio; 8:35 p.m.

Witnesses: Family, Coast Guard personnel, others separately

Features: Large elliptical object, light beams, sequentially flashing body lights, landing on ice-covered lake, effects on ice, satellite objects maneuvering around primary object

Coast Guard personnel responding to citizen reports of unusual aerial activity over Lake Erie witnessed a large elliptical object hovering over the lake. A family driving home saw the object, drove down to the beach to investigate and got out of the car. In the bright moonlight they could see ice on the lake which could be heard cracking like claps of thunder.

A huge, gunmetal gray, football-shaped object hovered low above the lake, rocking back and forth. Blinding white light emanated from both ends. The object was silent. When it moved, swinging one end toward the shore and descending, the family became frightened, ran back to their car and fled. At home, they could still see the object from a window that faced the lake.

The object moved out over the ice and descended, with red and blue lights now flashing in sequence along its lower edge. The family called the Eastlake police to report a UFO. After several referrals to other agencies, with no one expressing much interest, someone suggested the Coast Guard.

Suddenly 5 or 6 bright yellow triangular objects shot out of the center of the large object and began darting around independently. Once they stopped and hovered point up around the parent object, then sped away to the north, turned east, then inland toward the Perry nuclear power plant. Independent witnesses observed this action. At this point the family called the Coast Guard which sent a team to investigate.

Seaman James Power and Petty Officer John Knaub arrived. They told the family that they had seen some lights over the lake from Fairport Harbor and thought they were flares. Maybe there were some fishermen trapped out on the ice. The family pointed out the main craft with some of the triangular objects still zipping around it. The men drove closer to the lake to investigate, accompanied by the husband and wife. At the lakefront all could hear the ice rumbling and roaring.

In their incident report later sent by teletype to the Coast Guard headquarters in Detroit, Michigan, the men were quoted as saying that "the ice was cracking and moving abnormal amounts as the object came closer to it."

Power and Knaub gave a running report to their base via the two-way radio in their Chevy Suburban. The window was down, and the husband and wife overheard them saying words to the effect, "Be advised the object appears to be landing on the lake...There are other objects moving around it. Be advised these smaller objects are going at high rates of speed. There are no engine noises and they are very, very low." They continued to watch for over an hour. The men were overheard saying such things to their base as, "You should be advised that the object is now shining lights all over the lake and it's turning different colors." The men had to yell to be heard on the radio because of the thunderous noise of the rumbling ice.

Suddenly the smaller triangles returned and one by one entered the side of the parent object as it seemed to land on the ice. The object then flashed a series of red, blue, and yellow lights, the light emanating from the end of the object turned from white to red, and the triangles re-emerged and hovered above it. The noise from the ice abruptly ceased, and the lights and triangles disappeared. When it was over the Coast Guard men drove away, "white-faced," according to the husband. (Evans, 1992; see also Coast Guard teletype report on incident)

May 25, 1995; Bovina, Texas; 10:30 a.m.

Witnesses: Capt. Gene Tollefson, First Officer John J. Waller, America West Airlines Flight 564

Features: Large silhouetted cigar-shaped object, pulsating lights along body, reported radar

## track

An America West B-757 airliner was cruising at 39,000 feet near Bovina, Texas, en route from Tampa, Florida, to Las Vegas, Nevada. To their right and somewhat below their altitude, the crew saw a row of bright white lights which sequenced on and off from left to right. The co-pilot contacted the Albuquerque FAA Air Route Traffic Control Center while the sighting was in progress inquiring about possible military activities. Checks were made with military installations in the area, but no explanation could be found.

As the airliner proceeded westerly and the object began dropping behind, the crew observed it against a background of thunderclouds. When the background clouds pulsed with lightning, they could see the silhouette of a dark, wingless, elongated cigar-like object around the strobing lights. Though they did not know the object's exact distance, the pilot and co-pilot estimated it to be 300-400 feet long.

FAA radar at Albuquerque did not show the object. One of the air traffic controllers contacted the North American Air Defense Command (NORAD), which monitors North American air space by radar, and said that NORAD had confirmed an unidentified radar track in the vicinity. This later proved to be a small aircraft whose transponder was not working.

Next morning the controller said he checked with NORAD again. NORAD told him that they had tracked another, very unusual target in the same general area a short time later - something that at first was stationary, then accelerated rapidly and stopped abruptly, repeating this sequence several times. The bursts of speed were computed to be between 1,000 and 1,400 m.p.h. This report, based on the word of one air traffic controller, could not be independently confirmed. (W. Webb, 1996)

## Maneuvered Motion and "Intelligent Control"

Following the nearly year-long 1952 UFO sighting wave in which there were repeated instances of jet interceptors chasing after UFOs that also showed on radar, the Central Intelligence Agency convened the so-called Robertson Panel to evaluate the data. Among the presentations made to the scientific panel was one by Dewey J. Fournet (USAF, Ret.) who had worked with scientific analysts conducting a rigorous motion analysis study of hardcore unexplained cases.

Edward J. Ruppelt, former Chief of the Air Force Project Blue Book investigation, later reported that the study was "very hot and very controversial...[it] was hot because it wasn't official and the reason it wasn't official was because it was so hot. It concluded that UFOs were interplanetary spaceships." (Ruppelt, 1956, pp. 285-286)

Air Force analysts had reached this conclusion before. Project Sign in 1948 had issued a Top Secret Estimate of the Situation drawing the same conclusion. (Hall, 1964, p. 110) But both times outside scientific consultants, on the basis of what were arguably superficial and excessively skeptical reviews, disputed the conclusion. (Hall, 1988, pp. 155-163)

Many of these jet interception cases included a sort of "cat-and-mouse" behavior on the part of the UFOs, pulling away from the pursuing jets and then slowing down until they caught up again. This behavior has been repeated throughout the history of UFOs, and is one of the many indicators of intelligence behind the phenomenon. Case after case can be cited of UFOs apparently playing interactive games with (a) military aircraft, and (b) police cruisers.

Sept. 3, 1965; Damon, Texas; 11:00 p.m.

Witnesses: Deputy Sheriff Billy E. McCoy; Deputy Sheriff Robert W. Goode

Features: Elongated structured object, body lights, brilliant illumination, cat-and-mouse interaction

While on routine patrol duty, Goode and McCoy spotted a bright purple light on the horizon over the prairie to the southwest about five to six miles distant. They discussed several possible explanations for what they were seeing--lamps, an oil-drilling rig--but none of them seemed to fit. Suddenly without warning, a blue light--smaller in diameter--emerged from the purple light and moved to its right before stopping. Both lights remained in this orientation for a period of time before beginning to drift upwardly. This upward floating motion, as McCoy described it, continued until the objects reached a position 5 to 10 degrees above the horizon. Goode then looked at the lights through a pair of binoculars, but he could see no further details.

Their curiosity aroused, the officers began to look for back roads that might take them closer to the lights. Goode stopped near a pasture and once again used the binoculars to observe the objects through the open car window. This time, as the men watched, the lights suddenly swooped toward them at fantastic speed, covering the intervening distance in one to two seconds. The officers saw a solid object which abruptly stopped and hovered practically overhead. Its brilliant purple light illuminated them and the nearby ground. The purple and blue lights were attached to opposite ends of an enormous object, hovering about 150 feet from

them over the pasture at a height of about 100 feet. In his subsequent statement to the Air Force, McCoy described what he saw:

"The bulk of the object was plainly visible at this time and appeared to be triangular shaped with a bright purple light on the left end and the smaller, less bright, blue light on the right end. The bulk of the object appeared to be dark gray in color with no other distinguishing features. It appeared to be about 200 feet wide and 40-50 feet thick in the middle, tapering off toward both ends. There was no noise or any trail. The bright purple light illuminated the ground directly underneath it and the area in front of it, including the highway and the interior of our patrol car. The tall grass under the object did not appear to be disturbed. There was a bright moon out and it cast a shadow of the object on the ground immediately below it in the grass."

The object seemed to be "...as big as a football field." Goode could feel heat from the object through his shirt-sleeved left arm. Frightened by the strange object looming overhead, the officers "...put the car in motion and headed toward Damon as fast as we could go" at speeds of up to 110 miles per hour. McCoy kept watch out the rear window of the car, monitoring the object's actions. After 10 to 15 seconds, the UFO abruptly shot back in the direction from which it had come. "After arriving at approximately its original position," McCoy observed, "it went straight up in the air and disappeared at 25-30 degrees above the horizon."

After they calmed down, McCoy and Goode decided to return to the area and attempt to identify the mysterious object. Back on Highway 36 near the area where they had first seen the lights, they again spied the purple light on the horizon. Once again the smaller blue light moved out from it with a strange two-step motion and the lights floated upward. Frightened by the possibility of another unwelcome close encounter, they again fled.

The deputies reported the sighting to Ellington Air Force Base, and Major Laurence Leach, Jr., arrived on September 8 to interview McCoy and Goode and take a statement. Leach, in his report to Project Blue Book headquarters at Wright-Patterson Air Force Base, indicated that he was puzzled after interviewing the two men. "[T]here is," he wrote, "no doubt in my mind that they definitely saw some unusual object or phenomenon."

Both officers appeared to be intelligent, mature, level-headed persons capable of sound judgment and reasoning." The Air Force ultimately characterized the sighting as unexplained. (Project Blue Book files, National Archives; McCoy statement, Brazoria County Sheriff's Department, Sept. 8, 1965; "Ellington [AFB] Probes UFO Seen by Local Deputies," Brazosport Facts, Sept. 6, 1965; Rhonda Moran, "The Night of the UFO," Brazosport Facts, Sept. 13, 1995.)

April 17, 1966; Ravenna, Ohio; dawn

Witnesses: Dale Spaur and Wilbur Neff, deputy sheriffs; police officers in several other jurisdictions

Features: Structured disc-like object with brilliant light beam to ground, cat-and-mouse chase across state line

Portage County Deputy Sheriffs Spaur and Neff were investigating an abandoned car when they were confronted by a glowing disc-like object that rose up out of the woods and stopped overhead, illuminating them and the surroundings. The object was making a humming sound. After conferring with the dispatcher, they chased the object into Pennsylvania. Along the route other police officers, hearing the radio chatter about something strange headed their way, then joined in the chase as the UFO sped by, followed by the Portage County sheriff's car in hot pursuit.

The object seemed to play a cat-and-mouse game with Spaur and Neff, speeding up and then slowing down until they could catch up again. At the conclusion of the sighting the object moved off into the distance and hovered motionless for a while. Finally it shot straight up out of sight disappearing among the background stars. (Weitzel, 1966; Clark, 1998, pp. 450-465)

## Aggressive Encounters

Anyone who holds out for the "Natural Phenomenon Hypothesis" or the "Secret Earthly Technology Hypothesis" has serious problems, based not only on the "structured object" type cases described here and the performance capabilities displayed, but also on the length of time that reports of this kind have been made. Such reports date back at least to the early 20th Century (Hall, 1999 in process). Also, to simply label UFOs as "probably a natural phenomenon (or phenomena)" without actually conducting scientific investigations dangerously trivializes the nature of the UFO phenomenon and the serious impact that it has had on individual human beings and society.

One simply cannot ignore and refuse to study a "natural phenomenon" that flies at will through restricted air spaces endangering airline passengers, that menaces citizens by abruptly confronting them and blocking their way, and that inflicts serious medical injuries in numerous cases. Such a natural phenomenon should at least be funded for scientific research to the same extent that tornadoes, hurricanes, and other natural disasters are.

March 15, 1965; Everglades; 1:00 a.m.

Witnesses: James Flynn, dog trainer; ophthalmologist who treated his eye damage; investigators who discovered strong physical trace evidence

Features: Conical object, sound, light beam, physiological effects, animal reaction, physical trace evidence

Flynn, while camping in the Florida Everglades, saw a cone-shaped object hovering and walked in its direction to investigate, thinking it might be a military craft in distress. The object emitted noise like a diesel generator, and his dogs howled. Flynn waved his arms, and at that point heard a jet-like noise and felt a blast of wind, and a thin light beam flashed from the object striking him in the head and knocking him unconscious. Searchers later found damaged foliage at the site, including a 72-foot diameter circle of burned sawgrass. Flynn suffered severe physiological effects, including partial blindness and measurable eye damage. (Keyhoe & Lore, 1968, pp. 12-16; see ophthalmologist's report, pp. 14-15)

Sept. 19, 1976; Tehran, Iran; 1:30 a.m.

Witnesses: Two F-4 pilots, military radar, citizens

Features: Brilliantly glowing object, radar-target, jet-pursuit, E-M effects on weapons systems

A 1976 Defense Intelligence Agency (DIA) evaluation report and a three-page Department of Defense teletype message described an especially significant UFO case. The Iranian Air Force Command Post received citizen's calls about some UFO activity, and subsequent sightings of a bright glowing object led them to scramble an F-4 "Phantom" jet from Shahrokhi AFB to investigate. The F-4 was airborne at 1:30 a.m. and proceeded to a point 40 nautical miles north of Tehran. The pilot could see the brilliant light of the UFO easily at a distance of 70 miles.

As the F-4 closed in on the object, all instrumentation and communications (both UHF and intercom) were lost. The pilot broke off the intercept and headed back to base. "When the F-4 turned away from the object and apparently was no longer a threat to it, the aircraft regained all instrumentation and communications," said the DIA report.

A second F-4, at 1:40 a.m., acquired a radar lock-on at 27 nautical miles, 12 o'clock high position with the rate of closure at 150 knots. As the range decreased to 25 nautical miles, "the



object moved away at a speed that was visible on the radar scope and stayed at 25 nautical miles."

The size of the radar return was comparable to that of a Boeing 707. The visual size of the object was difficult to discern because of its intense brilliance. It had flashing strobe lights arranged in a rectangular pattern, alternating blue, green, red, and orange in color. They flashed so rapidly that all the colors could be seen at once.

As the F-4 continued the pursuit on a southerly course, another brightly lighted object emerged from the first object and headed straight toward the F-4 like a missile, at a high rate of speed. The pilot attempted to fire an AIM-9 missile at the UFO, "but at that instant his weapons control panel went off and he lost all communications (UHF and interphone). At this point the pilot initiated a turn and negative G dive to get away. As he turned the object fell in trail at what appeared to be about 3-4 nautical miles. As he continued in his turn away from the primary object the second object went to the inside of his turn then returned to the primary object for a perfect rejoin." After seeing a light from the object speed toward the ground, the pilot descended to investigate a possible missile explosion and lost sight of the main object.

The DIA evaluation termed this: "An outstanding report. This case is a classic which meets all the criteria necessary for a valid study of the UFO phenomenon." The analysis called the UFO performance "awesome," noting that the objects displayed "an inordinate amount of maneuverability." (The U.F.O. Investigator, NICAP, November 1976; DIA Defense Information Report Evaluation, IR No. 6846013976, 22 Sept 1976, by Maj. Roland B. Evans, USAF, Military Capability Analyst; International UFO Reporter, January 1978, pp. 6-7; Tehran Journal, September 20, 1976; Fawcett & Greenwood, 1984, pp. 81-86)

### Physical and Physiological Effects

The tangible effects reported in the cases above are practically a standard feature of "solid object" cases. Additional examples of physical and physiological effects include the following.

Oct. 15, 1966; Split Rock Pond, New Jersey; 4:30 a.m.

Witnesses: Jerry H. Simons, a forester

Features: Disc-shaped object, car pacing, brilliant illumination, E-M effects, physiological effects

After camping out at Split Rock Pond, Simons was driving home when he saw a red-orange glow around his car, then noticed a disc-shaped object following him. As the light from the object brightly illuminated his vehicle and the surrounding ground, his headlights and engine failed. The E-M effects were correlated with the light beam, occurring only when the car was within the illuminated area. [Cf., March 4, 1969, Atlanta, Missouri, below] When he stopped to report the incident and returned to his car, he found that the engine had started up spontaneously.

Shortly after the sighting Simons had a cyclical recurring illness lasting three months and was hospitalized, but no cause could be found. The witness' recurring medical problems were considered sufficiently unusual to warrant this case history report. (Medical Times, October 1968)

April 4, 1969; Atlanta, Missouri; 6:40 a.m. (after sunrise)

Witnesses: William Overstreet, mail carrier

Features: Brilliant red object, blinding light beam, heat, E-M effects associated with light beam

While driving east near Atlanta, Missouri, Overstreet encountered a round glowing red object emitting a blindingly bright light beam to the ground, and he felt heat. The object paced just ahead of his vehicle. When the witness drove into the light beam, his motor and radio failed. The E-M effects were correlated with the light beam, and the vehicle functioned normally outside of its illumination. Overstreet trailed the object for about 4 miles at about 40 m.p.h., watching as it rose and fell as if following contours of the terrain. After 7-8 minutes the object veered off to the southeast and flew out of sight. (Witness report in NICAP files; Kansas City Star, Mar. 6, 1969)

December 29, 1980; Huffman, Texas; 9:00 p.m.

Witnesses: Betty Cash, Vickie Landrum, Colby Landrum; dozens who observed the helicopters

Features: Cone-, spindle-, or top-shaped object, body lights, severe physiological effects

While driving through the Piney Woods of East Texas, about 40 miles northeast of Houston, Betty Cash, Vickie Landrum and her grandson Colby noticed a bright light ahead. As they approached to within about 130 feet they were confronted by an intensely luminous diamond-shaped object emitting exhaust-like flames down toward the road. Betty stopped the car to avoid the flames, but the car interior became hot and they were forced outside where the heat

from the object burned their skin. They were terrified by this apparition.

The object was silvery and metallic-appearing and small blue lights were visible around the center. Periodically, flames flared out of the bottom with a "whooshing" sound and each time this happened, the object rose a few feet, only to settle back toward the road when the flames ceased. The witnesses could feel a burning sensation on their faces. Although it was a chilly evening, the car was too hot to touch.

Just as the object began slowly ascending into the sky, a large number of helicopters (approximately 12 of them later were determined to be CH-47 Chinooks) showed up and appeared to be trying to force the object to land. Instead, it flew away with more than 20 helicopters in pursuit. Betty was finally able to resume driving, and she dropped the Landrum's off at their house and proceeded home. She immediately became ill, experiencing headache, nausea, vomiting, and diarrhea, red and blistered skin, and swollen eyes.

The Landrum's also were experiencing similar symptoms, but less severe. They had upset stomachs and badly "sunburned" skin. Betty, however, was admitted to the hospital on January 3, 1981, after losing large patches of skin and clumps of hair and lapsing into semi-consciousness. She had severe medical problems for a long time afterwards. Radiologist Peter Rank later concluded, after examining the medical records, that the trio had been exposed to ionizing radiation, possibly combined with some infrared or ultraviolet light as well.

An investigation by the Army Inspector General's office could not find the source of the helicopters, suggesting that some clandestine special forces unit may have been involved. The case has profound implications for apparent Government awareness of UFOs and related secret operations. (Schuessler, 1998)

## Propulsion Physics & Technology

Various clues to the nature of UFO technology are contained in hundreds or thousands of reports. The following categories of UFO data are fully documented in a forthcoming report, which contains extensive tables of cases exhibiting the relevant features. (Hall, 2000) The hypothesis that structured UFOs as reported here are manufactured craft deserves the most serious consideration. The accumulated data of 50 years strongly suggests manufactured, technological air- or spacecraft.

The various manifestations of light associated with UFOs almost certainly are central to an understanding of the energies involved. UFOs have displayed light beams (including "solid light"), brilliant and often blinding radiance that illuminates the local environment, pulsating or flashing body lights, and color and luminosity changes associated with certain motions or performances. The carriers of these lights typically are geometrical objects.

**BODY LIGHTS.** Three basic types:

1. Rows of equally spaced lights around a curved surface, typically the edge of a disc or central circumference of an ellipse; they sometimes flash or pulsate in a sequence, or are described as "rotating";
2. "Running lights" analogous to those on aircraft extremities, separately located on the body singly or in pairs, often quite prominent;
3. Brightly flashing lights resembling aircraft anti-collision strobe lights; and forwardly placed, that resemble car headlights and beam spotlights toward the ground; sometimes the lights sweep around like searchlights.

**LIGHT BEAMS.** Types of light beams include the headlight-like lights mentioned above, and "solid light" (truncated light beams that extend out of and retract into the craft as if solid), and thin laser-like beams often shining out horizontally or at an upward angle as if navigational or communication beacons. In a surprising number of cases, UFOs have reacted immediately when a spotlight was shone at them, typically displaying rapid (evasive?) motion and sometimes beaming a light back toward the witness. The spotlight-like beams often are directly associated with E-M and physiological effects. More than 50 examples of typical light beam cases are cited in the forthcoming report. (Hall, 2000)

**BRILLIANT ILLUMINATION.** UFOs are sometimes so brilliantly luminous that they radiate light around a wide area, illuminating the terrain as they hover or pass over. Such cases suggest enormous quantities of light energy. Witnesses over and over have used expressions such as "blinding," "it hurt my eyes to look at it," "it lit up the ground as bright as day" to describe the UFO.

August 19, 1972; Colby, Kansas; 2:00 a.m.

Witnesses: Sgt. Paul Carter, Officer Dennis Brown, Officer Earl Wood, Jr., Officer Duane

Nelson, 50-60 citizens

Features: Dome-shaped, sound, flashing body lights, blinding luminosity, hover, rapid upward acceleration

A series of sightings was reported to police, the first call at 2:00 a.m. from John L. Calkins. Awakened by barking dogs, he went to his front door and saw three objects hovering nearby, making shrill, high whistling sounds. The larger object had six flashing red and green body lights. He also heard beeping sounds. The sightings continued until about 6:20 a.m.

Sgt. Paul Carter, Colby police officer, while patrolling at 2:07 a.m. saw an apparent craft with red and green flashing lights approach from the northeast. He radioed officer Dennis Brown and began to follow the object southward until it stopped and hovered 10-15 feet above a pasture about 1/4 mile away. He estimated that it was 30-35 feet long and 18-20 feet tall.

Suddenly the object emitted intense, blinding white light ("too intense to look at") that illuminated the terrain as bright as daylight. He could even see jackrabbits in the field by the glare of the light. The brilliant luminosity tended to conceal the shape of the object, but twice Carter could see that it was "like a cereal bowl turned upside down." The object then made a "whooshing noise similar to a vacuum cleaner" and shot straight up into the sky and out of sight in about 3 seconds. Officer Brown, approaching Carter's position, saw the glow of the object and saw it rocket up into the sky.

Later the object was seen heading southeast toward Oakley where police observed it through binoculars. Officer Earl Wood, Jr., and his partner, Duane Nelson, could see six body lights on the object, and saw that it was circular in shape. Three lights on the front were white, and those on the back flashed from red to green. (Flying Saucer Review, November-December 1972, pp. 30-31; MUFON UFO Journal, August 1987, p. 20)

Other examples: Oct. 11, 1967, LaPoint, Utah, night. A luminous orange object approached and hovered over a truck, its color changing to green and blue, the light illuminating the area bright as day. The object followed the truck around several turns, then departed upward at high speed. (Salisbury, 1974, pp. 55-61). June 9, 1972, Algodonales, Cadiz, Spain, 10:30 p.m. Motorist suddenly blinded by bright light from a pulsating yellow oval ahead of car, E-M effects on car, object lit up trees as it passed over them while departing. (Ballester Olmos, 1976, Case 155, p. 37)

**PROPULSION CLUES.** Numerous reported features contain possible clues to the propulsion

## technology of UFOs:

1. Bands or rings, sometimes rotating
2. Apparent exhaust products (e.g., "fog" or mist, flame or sparks, luminous trails)
3. Whistling, humming, buzzing, or hissing sounds that increase or decrease in intensity or pitch in correlation with performance
4. color and/or luminosity changes in correlation with performance (a strong pattern has been established of luminosity increase with acceleration).

FLIGHT PATTERNS. Although numerous observed features of UFOs suggest human-like technology (e.g., rotation, flashing lights, humming sound, sparks, smoke) Several of the repetitive flight patterns indicate physical principles or engineering accomplishments of a much higher order. Three of the most significant are:

1. Hover-acceleration
2. Hummingbird-like motions
3. "Instant relocation"

Picture the following (based on numerous case histories): A luminous disc-shaped object approaches horizontally, hovers for an extended period of time, then abruptly departs at a steep upward angle rapidly diminishing to a pinpoint and disappearing. A top-shaped UFO hovering in the sky speeds away when an intercepting jet approaches, darting to a new location, stopping, darting off in a different direction, moving up, down, and sideways in the manner of a hummingbird. A disc-shaped UFO with domed superstructure hovers at low altitude, then suddenly disappears and immediately reappears in a new location.

The combined appearance and performance features, and the reported E-M and physiological effects, collectively suggest some form of electromagnetic-gravitic propulsion that somehow screens the occupants from inertial effects. Paul R. Hill, a respected NASA aeronautical engineer who witnessed a group of high-performance UFOs in 1952, has produced a

pioneering book on bridging the technology gap between our technology and UFOs. (Hill, 1995) James McCampbell, another engineer, has carefully examined the probable physical principles and technology involved. (McCampbell, 1973)

This article does not attempt to deal with the numerous reports of humanoid beings seen in association with typical UFOs all over the world. Obviously, these reports--if valid--also indicate that UFOs are craft and they militate strongly against any "natural phenomenon" hypothesis. However, a discussion of alleged "eyeball-to-eyeball" contact with aliens is beyond the scope of this paper. A strong case can be made for UFOs as someone else's technology without reference to alien contact claims.

### Review of Scientific Objections

1. Only naive, poorly trained observers report UFOs.

Reply: People from all walks of life and all educational levels, and all occupational categories, have reported UFOs, including scientists, engineers, professional pilots, university professors, and clergymen.

2. People see UFOs because they are looking for "salvation" from our earthly problems.

Reply: The fear, puzzlement, and deep concern that time after time is manifested by witnesses contradicts the notion that people somehow see "salvation" in UFOs.

3. The notion that such a gigantic event as contact with alien beings could be kept secret is absurd.

Reply: Not if the people who have significant information about UFOs are just as puzzled and confused as everyone else, don't know what it all means, and are more inclined to avoid the subject as much as possible and "hope it will go away" than to confess that they don't have any answers.

4. UFOs, if they exist, obviously must be some natural phenomenon.

Reply: Those who use this argument clearly are unaware of the nature and scope of UFO data and have bought into the "vague lights" stereotype. Other natural phenomena that impact human society in a lesser fashion than UFOs receive far more funding for

scientific study. This ill-considered argument trivializes the very large body of data that its proponents are either unaware of or ignoring.

5. The occurrence of a UFO sighting is not predictable, the events are not repeatable, therefore UFOs can't be studied.

Reply: UFOs are at least as repeatable and predictable as automobile accidents, tornadoes, hurricanes, and meteorites, and can be studied by some of the same scientific approaches that are applied to these events.

6. There is nothing of any substance to investigate.

Reply: Read this paper, study the cited literature.

## What Science Could Do

Aside from the potentially fertile fields of study that UFOs offer to scholars in sociology, history, psychology, history and sociology of science, anthropology, and political science, the ways that the physical and biological sciences COULD meaningfully study these reports is limited only by two lacks: lack of imagination and lack of funding. The following suggestions merely scratch the surface:

1. Have multidisciplinary teams on standby to go to the scene of a close encounter UFO sighting with reported physical or physiological evidence, systematically gather data, and conduct all appropriate laboratory analyses. Apply forensic science investigative techniques very much like those used at an accident site or crime scene. In the case of physiological effects on witnesses, conduct appropriate medical tests. For vehicles that have experienced E-M effects, make notes on the age and condition of the engine, document the ignition system and lights, and check vehicle for magnetic signature.
2. Develop an instrumentation package to transport quickly to areas where UFO sightings persist for a period of time (there are numerous precedents for this). Include sophisticated tracking cameras and special films, diffraction gratings or other light spectrum analyzers, broad-spectrum electromagnetic energy detectors, and tape recorders with sensitive directional microphones for recording sound.



3. Compile a computer data base of all cases that meet a certain minimum set of standards geared toward potential evidential value. Conduct statistical analyses of geophysical associations. Systematically study the data relevant to propulsion clues and UFO physics.
4. Compile historical evidence on radar-visual UFO sightings, encourage current reporting of radar-visual cases to a central agency, and analyze these cases in terms of known radar imagery and the particular radar set capabilities.
5. Compile historical catalogues of all known physical and physiological evidence cases and systematically acquire all extant analysis reports. Encourage current reporting of similar cases to a central agency. This would include E-M effects on vehicles and effects on humans and animals, as well as physical trace evidence.
6. Encourage reputable witnesses who are willing to swear an affidavit about their still photographs or motion picture/videotape films, use a selective process to determine which films potentially have probative value, and submit the selected films to expert photoanalysis.
7. Establish a refereed scientific journal that will entertain articles reporting on case investigations, physical and physiological evidence, and analysis reports and promote thorough peer review of all scientific studies.

## Why Study UFOs?

The benefits to society of mounting a true scientific study of UFO reports are numerous. There should be no stigma attached to scientists (or science) for conducting an open-minded investigation of an extremely widely reported phenomenon that is of deep concern to so many people. In fact, UFO data could be used to teach proper scientific methods when dealing with mysterious or borderline events. This approach has been suggested by a team of scientists, engineers, and science teachers. (Christensen et al., 1989)

In countless cases, human beings have been badly frightened by sudden menacing close encounters with brilliantly luminous, craft-like objects and their lives have been disrupted. Frequently medical injuries have resulted to the witnesses, apparently due to the energy fields involved. (Niemtzow, 1980) While trying to alert society to the phenomenon, they have been

further shocked by receiving ridicule rather than respectful attention.

Human reactions to the UFO phenomenon also must be understood in the context of growing skepticism (sometimes bordering on paranoia) about Government secrecy and concealment of important information from the public in an allegedly democratic society. A pervasive and largely unnecessary practice of arbitrary secrecy has proliferated since World War II. This has tended to stifle open discussion of many other potentially serious issues or problems (e.g., secret medical experiments on human beings; workers unknowingly exposed to dangerous levels of radioactive substances or cancer-causing chemicals).

Similarly, science and the news media are increasingly viewed with suspicion when they, in effect, ridicule rather than investigate. A program to confront UFO reports head-on and open up the subject to a fair-minded investigation could help to clear the air and to establish from the ground up (not necessarily buying into preconceived viewpoints) whether the evidence is trivial or nontrivial. An open-minded, objective program that treats UFO reports seriously might also help to restore some trust and faith in our major institutions.

Scientific funding, ultimately, comes from the public. Why not determine in a fair and even-handed way whether the public is willing to support a serious, objective investigation? Perhaps a good place to start would be a national poll that, properly designed, could work around the crushing effects of ridicule and find out what people would like to see done about UFO reports.

UFOs as craft--as someone else's technology--is one important hypothesis that could be tested. (In my estimation, it is the most likely hypothesis to be proven true.) But alternative hypotheses could be tested as well, so that the study would consider all possibilities. The scientific initiatives outlined above surely would discover a presently unrecognized natural phenomenon if that is the answer.

Having observed and/or participated in past attempts at scientific study of UFOs, however, I would caution that systematic and thorough data gathering (current and historical) necessarily must be the first and foremost element in any study with pretensions for being "scientific." Very little real science has been done on UFOs in 50 years. Instead, brief and superficial reviews and a lot of ill-informed and biased guesswork has been presented as "science."

Beware, particularly, of all arguments that follow the form of "UFOs can't be real because...." Many precedents in the history of science should give us pause about that type of reasoning.

## REFERENCES & NOTES

Ballester Olmos, Vicente-Juan. A Catalogue of 200 Type-1 UFO Events in Spain and Portugal (Chicago, Ill.: CUFOS, 1976, Case 155).

Clark, Jerome. The UFO Book: Encyclopedia of the Extraterrestrial (Detroit: Visible Ink Press, 1998).

Evans, Christopher. "Space Case: The Night the Coast Guard Got Buzzed," Cleveland Plain Dealer, July 12, 1992.

Evans, Hilary, and Dennis Stacy (eds.). UFOs, 1947(c)1997: From Arnold to the Abductees: Fifty Years of Flying Saucers (London, England: John Brown Publishing Ltd., 1997).

Fawcett, Larry and Barry J. Greenwood. Clear Intent: The Government Coverup of the UFO Experience (Englewood Cliffs, NJ: Prentice-Hall, 1984).

FBI, Special Agent in Charge, Albuquerque, N.M. Memo, Apr. 28, 1964, to Director, FBI.

FBI, Special Agent in Charge, Albuquerque, N.M. Memo, May 8, 1964 to Director, FBI, with report of same date titled "Unidentified Flying Object, Socorro, New Mexico, April 24, 1964." The report notes that Zamora has been personally known for about 5 years and is "well regarded as a sober, industrious, and conscientious officer and not given to fantasy." The report also confirms the scorched foliage and the imprints, noting that "Each depression seemed to have been made by an object going into the earth at an angle from a center line [and each] pushed some earth to the far side." Holder, Richard T. (Capt., U.S. Army). "UFO Report, 24 April 1964".

Fowler, Raymond E. Casebook of a UFO Investigator (Englewood Cliffs, NJ: Prentice-Hall, 1981).

Hall, Richard H. The UFO Evidence (Washington, DC: NICAP, 1964; Barnes & Noble reprint edition, 1997).

Hall, Richard H. Uninvited Guests (Santa Fe, NM: Aurora Press, 1988).

Hall, Richard H. From Airships to Arnold: UFO Reports in the Early 20th Century (report in process, 1999).

Hall, Richard H. The UFO Evidence, Volume II: A 30-Year Report (in manuscript; anticipated publication in 2000).

Hill, Paul R. Unconventional Flying Objects: A Scientific Analysis (Charlottesville, VA: Hampton Roads Publishing Co., 1995).

Holder, Capt. Richard T. "UFO Report" (1964), 4 pp. [Investigation report of Socorro case by U.S. Army investigator from White sands]

Hynek, J. Allen. "Socorro Revisited," report to Project Blue Book (1964) 8 pp.

Keyhoe, Donald E., and Gordon I.R. Lore. *Strange Effects From UFOs* (Washington, DC: NICAP, 1968).

McCampbell, James M. *UFOlogy: New Insights from Science and Common Sense* (Belmont, Calif.: Jaymac Co., 1973).

Phillips, Ted. *Physical Traces Associated With UFO Sightings* (Chicago: Center for UFO Studies, 1975).

Quintanilla, Hector, Jr. "The Investigation of UFOs," *Studies in Intelligence* (CIA), 10(4), Fall 1966, pp. 95-110. [See also his similar comments in a reminiscence titled "Project Blue Book's Last Years," Evans and Stacy, 1997, pp. 109-118].

Ruppelt, Edward J. *The Report on Unidentified Flying Objects* (Garden City, NY: Doubleday, 1956).

Rutkowski, Chris, and John P. Timmerman. "Langenburg, 1974: A Classic Historical CE2 and a Crop Circle Progenitor," in *International UFO Reporter*, March-April 1992, pp. 4-11.

Schuessler, John F. *The Cash-Landrum UFO Incident* (LaPorte, Texas: Geo Graphics Printing Co., 1998).

Webb, Walter N. *Final Report on the America West Airline Case, May 25-26, 1995* (UFO Research Coalition, 1996).

Weitzel, William B. *The P-13 UFO: Summary Report on April 17, 1966, UFO "Chase" from Portage County, Ohio, Into Conway, Pennsylvania* (Pittsburgh, PA: NICAP Subcommittee report, 1966).

Zeidman, Jennie. *Helicopter-UFO Encounter Over Ohio* (Chicago: Center for UFO Studies, 1979).

## SUGGESTED READING LIST FOR SCIENTISTS - ANNOTATED

American Institute of Aeronautics and Astronautics. AIAA UFO Subcommittee, "UFO: An Appraisal of the Problem," in *Astronautics and Aeronautics*, November 1970, pp. 49-51.

Christensen, Marge, et al. *Using Concepts From UFO Studies to Teach Science and Critical Thinking* (Privately published, 1989). [Ms. Christensen is a science teacher. Other contributors included several scientists]

Clark, Jerome. *The UFO Book: Encyclopedia of the Extraterrestrial* (Detroit, Mich.: Visible Ink Press, 1998). [A well-researched and highly useful general reference]

Donderi, Don C. "The Effect of Conscious and Unconscious Attitudes About UFO Evidence on Scientific Acceptance of the Extraterrestrial Hypothesis," in *Journal of UFO Studies*, Vol. I, No. 1, c. 1979, pp. 35-40. [The author is Professor of Psychology, McGill University, Montreal, Ontario, Canada]

Gillmor, Daniel S. (ed.) *Scientific Study of Unidentified Flying Objects* (New York: Bantam Books, 1969). [The final report of the University of Colorado UFO Project, Condon Committee]

Haines, Richard F. *Observing UFOs: An Investigative Handbook* (Chicago: Nelson-Hall, 1980). [The author is a NASA research scientist specializing in perceptual psychology.]

Hall, Richard H. *The UFO Evidence* (Washington, DC: NICAP, 1964; Barnes & Noble reprint edition, 1997).

Hill, Paul R. *Unconventional Flying Objects: A Scientific Analysis* (Charlottesville, VA: Hampton Roads Publishing Co., 1995) [The author was a NASA-Langley aeronautical engineer; this book was published by his widow]

Hynek, J. Allen. *The UFO Experience: A Scientific Inquiry* (Chicago: Henry Regnery, 1972). [The author was chairman of the astronomy department, Northwestern University, and a scientific consultant to the U.S. Air Force on UFOs]

Hynek, J. Allen. *The Hynek UFO Report* (New York: Dell Publishing Co., 1977).

Jacobs, David M. *The UFO Controversy in America* (Indiana University Press, 1975). [PhD thesis; the author is a professor of history at Temple University]

Kuhn, Thomas S. *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1970).

Maccabee, Bruce. "Photometric Properties of an Unidentified Bright Object Seen Off the Coast of New Zealand," in *Applied Optics*, vol. 18, 1979. [The author is a U.S. Navy scientist specializing in optics and laser physics]

McC Campbell, James M. *UFOlogy: New Insights from Science and Common Sense* (Belmont, Calif.: Jaymac Co., 1973). [The author is an engineering physicist specializing in nuclear technology; member, American Nuclear Society]

McDonald, James E. "UFOs: An International Scientific Problem," paper presented to Canadian Aeronautics and Space Institute, Mar. 12, 1968. [The author was a senior physicist and professor of meteorology at the University of Arizona, and a staff member of the Institute for Atmospheric Physics]

McDonald, James E. "Meteorological Factors in Unidentified Radar Returns," paper presented at the 14th Radar Meteorology Conference, Tucson, Arizona, Nov. 17-20, 1970. (Boston: American Meteorological Society, 1970), pp. 456-463.

McDonald, James E. "Science in Default: Twenty-Two Years of Inadequate UFO Investigation," in *UFOs: A Scientific Debate* (Cornell University Press, 1972).

Niemtzow, Richard C., M.D. "Preliminary Analysis of Medical Injuries as a Result of UFO Close Encounters," in *MUFON 1980 UFO Symposium Proceedings* (Seguin, Texas: Mutual UFO Network, 1980). [The author is an Air Force flight surgeon specializing in oncology]

Phillips, Ted. *Physical Traces Associated With UFO Sightings* (Chicago: Center for UFO Studies, 1975).

Rodeghier, Mark. *UFO Reports Involving Vehicle Interference* (Chicago: Center for UFO Studies, 1981). [The author has a PhD in sociology and is scientific director of the Center for UFO Studies]

Sagan, Carl, and Thornton Page (eds.) UFOs: A Scientific Debate (Cornell University Press, 1972).

Salisbury, Frank B. The Utah UFO Display (Old Greenwich, Conn.: Devin-Adair, 1974). [The author is a biologist and biochemist, and was Director of the Plant Science Department, State University of Utah]

Saunders, David R., and R. Roger Harkins. UFOs? Yes! Where the Condon Committee Went Wrong (New York: World Publishers, 1969). [The lead author was a professor of psychology, University of Colorado, and a principal investigator on the UFO Project headed by Dr. E.U. Condon]

Schuessler, John F. UFO-Related Human Physiological Effects (La Porte, TX: Geo Graphics Printing Co., 1996). [The author is a recently retired aerospace engineer, NASA-Houston]

Strentz, Herbert J. Survey of Press Coverage of Unidentified Flying Objects, 1947-1973. [PhD thesis in journalism; later a professor of journalism]

Sturrock, Peter A. Report on a Survey of the Membership of the American Astronomical Society Concerning the UFO Problem (Palo Alto, Calif.: Stanford Institute for Plasma Research, 1977). [The author is an astrophysicist at Stanford University]

Swords, Michael. "The University of Colorado UFO Project: The `Scientific Study of UFOs'," in Journal of UFO Studies, New Series, Vol. 6, 1995/1996. [The author is a professor of natural sciences at Western Michigan University, with progressive degrees in chemistry, biochemistry, and history of science and technology]

U.S. Air Force. Special Report of the USAF Scientific Advisory Board Ad Hoc Committee to Review Project "Blue Book", March 1966.

U.S. Congress, House of Representatives, Committee on Armed Services. Unidentified Flying Objects, Hearings, Apr. 5, 1966.

U.S. Congress, House of Representatives, Committee on Science and Astronautics. Symposium on Unidentified Flying Objects, Hearings, July 29, 1968.

Vaughan, Valerie (ed.) UFOs and Science: The Collected Writings of Dr. James E. McDonald (Washington, DC: Fund for UFO Research, 1995).

Zeller, Edward J. "The Use of Thermoluminescence for the Evaluation of UFO Landing Site Effects," in Proceedings of the 1976 CUFOS

[\*Back to UFO Page\*](#)

[\[Biography\]](#) [\[Civil War\]](#) [\[UFO\]](#) [\[HallMart\]](#) [\[Keyhoe Archives\]](#)

[\[Home\]](#)