

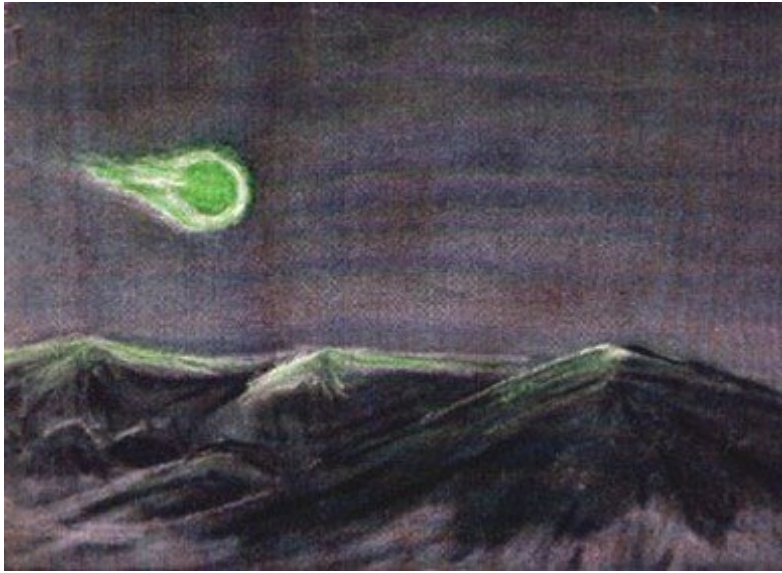


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HAVE WE VISITORS FROM SPACE?

The Air Force is now ready to concede that many saucer and fireball sightings still defy explanation; here LIFE offers some scientific evidence that there is a real case for interplanetary saucers.

by H. B. DARRACH JR. and ROBERT GINNA



[Painting by [Mrs. Lincoln LaPaz](#), who along with her family on July 10, 1947, had their own "UFO" sighting.]

For four years the U.S. public has wondered, worried or smirked over the strange and insistent tales of eerie objects streaking across American skies. Generally the tales have provoked only chills or titters, only rarely, reflection or analysis.

Last week the U.S. Air Force made known to **LIFE** the following facts:

- As a result of continuing flying saucer reports the Air Force maintains constant intelligence investigation and study of unidentified aerial objects.
- A policy of positive action has been adopted to find out, as soon as possible, what is responsible for observations that have been made. As a part of this study, military aircraft are alerted to attempt interception, and radar and photographic equipment will be used in an attempt to obtain factual data. If opportunity offers, attempts will be made to recover such unidentified objects.
- Already all operational units of the Air Force have been alerted to report in detail any sightings of unidentified aerial objects. Other groups – scientists, private and commercial pilots, weather observers – all trained observers whose [work](#) in any way concerns the sky, and what happens in it, are urged to make immediate reports to Air Technical Intelligence Center at Wright-Patterson AFB, Dayton, Ohio of any unidentified aerial objects they sight.
- Further, for the first time since Project "Saucer" was changed from a special-type project to a standard intelligence function, in December 1949, the Air Force invites all citizens to report their sightings to the nearest Air Force installation. All reports will be given expert consideration and those of special [interest](#) will be thoroughly investigated. The identity of those making such reports will be kept in confidence; no one will be ridiculed for making one.

- There is no reason as yet to believe that any of the aerial phenomena commonly described as flying saucers are caused by a foreign power or constitute a clear and present danger to the U.S. or its citizens.

These disclosures, sharply amending past Air Force policy, climaxed a review by **LIFE**, with Air Force officials, of all facts known in the case. This review has resulted from more than a year of sifting and weighting all reports of unexplained aerial phenomena – from the so-called flying saucers to the mysterious green fireballs so often sighted in the Southwest. This inquiry has included scrutiny of hundreds of reported sightings, interviews with eyewitnesses across the country and careful reviews of the facts with some of the world's ablest physicists, astronomers, and experts on guided missiles. For the first time the Air Force (while in no way identifying itself with any particular conclusions) has opened its files for study.

Out of this exhaustive inquiry these propositions seem firmly shaped by the evidence:

- 1. Disks, cylinders and similar objects of geometrical form, luminous quality and solid nature for several years have been, and may be now, actually present in the atmosphere of the earth.
- 2. Globes of green fire also, of a brightness more intense than the full moon's, have frequently passed through the skies.
- 3. These objects cannot be explained by present science as natural phenomena — but solely as artificial devices, created and operated by a high intelligence.
- 4. Finally, no power plant known or projected on earth could account for the performance of these devices.

Let us first review some widely known facts.

The shapes and inscrutable portents of the flying disks first broke upon the skies of the world in the early months of 1947, with several sightings reported to the Air Force. The story first reached the nation on June 24, 1947, when a private pilot named Kenneth Arnold was flying from Chehalis to Yakima, Wash. Some 25 miles away, Arnold saw nine "saucerlike things...flying like geese in a diagonal chainlike line," approaching Mount Rainier. They swerved in and out of the high peaks at a speed Arnold estimated to be 1,200 mph.

Arnold told the whole story to his hometown newspaper, and like summer lightning it flashed across the country. Within a month, saucers had been reported by people in 40 states. For the public (as **LIFE** itself merrily reported in its issue of July 21, 1947) he saucers provided the biggest game of hey-diddle-diddle in history. Any man, woman, or child with talent enough to see spots before his eyes could get his name in the newspaper.

Nevertheless in serious moments most people were a little worried by all the "chromium hubcaps," "flying washtubs" and "whirling doughnuts" in the sky. Buried in the heap of hysterical reports were some sobering cases. One was the calamity that befell Air Force Captain Thomas F. Mantell on Jan. 7, 1948. That afternoon Mantell and two other F-51 fighter pilots sighted an object that looked like "an ice-cream cone topped with red" over Godman Air Force Base and Fort Knox, Ky. Mantell followed the strange object up to 20,000 feet

and disappeared. Later in the day his body was found in a nearby field, the wreckage of his plane scattered for a half mile around. It now seems possible that Mantell was one of the very few sighters who actually were deceived by a Skyhook balloon, but the incident is still listed as unsolved by the Air Force files.

There was no such easy explanation for the strange phenomenon observed at 2:45 a.m. on July 24, 1948 by two Eastern Air Lines pilots. Captain Clarence S. Chiles and Copilot John B. Whitted were flying in bright moonlight near Montgomery, Ala. when they suddenly saw "a bright glow" and a "long rocket-like ship" veer past them. They subsequently agreed that it was a "wingless aircraft, 100 feet long, cigar-shaped and about twice the diameter of a B-29, with no protruding surfaces, and two rows of windows. . . From the sides of the craft came an intense, fairly dark blue glow. . . like a fluorescent factory light." They said the weird craft "pulled up with tremendous burst of flame from the rear and zoomed into the clouds at about 800 miles an hour," rocking their DC-3 with its "prop or jet wash."

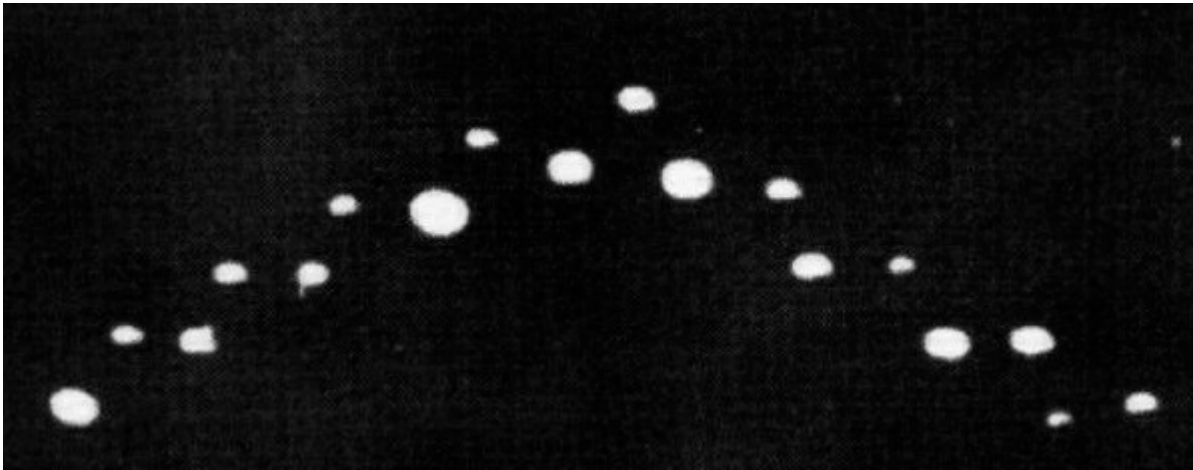
Just as inexplicable was the experience of Lieut. George Gorman of the North Dakota Air National Guard. On Oct. 1, 1948 Gorman was coming in at dusk to land his F-51 at Fargo, when he saw an intense, bright light pass 1,000 yards away. Curious, Gorman followed the light and saw that it seemed to be attached to nothing. For 27 hair-raising minutes Gorman pursued the light through a series of intricate maneuvers. He said it was about 6 inches in diameter and going faster than his F-51 (300-400 mph). It made no sound and left no exhaust trail. After Gorman landed, the light having suddenly flashed away in the upper air, he found support for his story – the chief of the control tower had followed the fantastic "combat" with binoculars.

The occurrences, jarring though they must have been to the participants, left the official calm of the Air Force unruffled. The project set up to investigate the saucers ("Project Sign," known to the press as "Project Saucer") seemed to have been fashioned more as a sedative to public controversy than as a serious inquiry into the facts. On Dec. 27, 1949, after two years of operation, Project Saucer wrote off all reports of unidentified aerial phenomena as hoaxes, hallucinations or misinterpretations of familiar objects — that is, all but 34. These stubborn 34, seemingly unexplainable, were briskly dismissed as psychological aberrations.

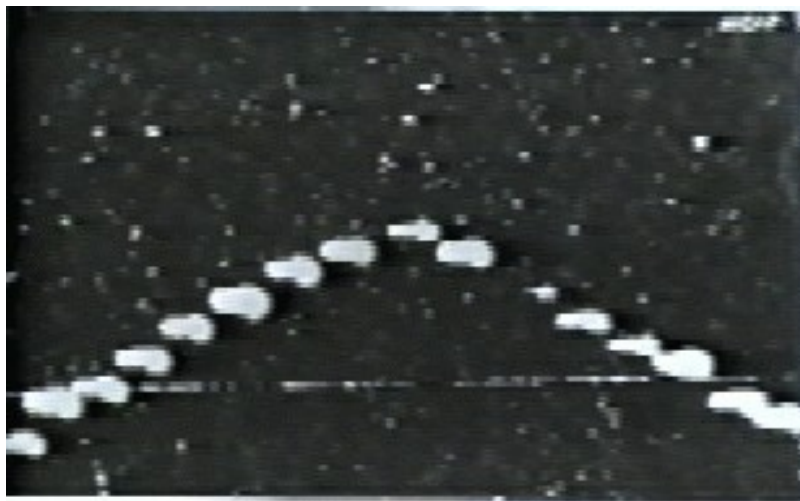
While these assurances appeased most of the press and pacified the public, some elements in the Air Force just about this time began to worry a bit more seriously. Saucer reports continued to come in a rate of about one a day and were handled under the code name of "Project Grudge." Officers at policy level began to show concern. "The higher you go in the Air Force," conceded one Intelligence officer, "the more seriously they take the flying saucers."

There was good reason to be serious. As review of all records has shown, these years have produced literally dozens of incidents defying simple explanation — and provoking the most incredible questions.

Checked and rechecked, 10 cases out of the formidable list on record are here presented in essential detail. Of these, three were discovered in the course of **LIFE's** own investigation and are reported for the first time.



THE LUBBOCK LIGHTS, flying in formation, are considered by the Air Force the most unexplainable phenomena yet observed. These photographs [only two shown here] were made at Lubbock, Texas, on August 30th, 1951 by Carl Hart, Jr.



Scientists say lights were not natural objects, but they traveled too fast and too soundlessly for known machines.

INCIDENT 1

At 9:10 p.m. on Aug. 25, 1951, Dr. W. I. Robinson, professor of geology at the Texas technological College, stood in the back yard of his home in Lubbock, Texas and chatted with two colleagues. The other men were Dr. A. G. Oberg, a professor of chemical engineering, and Professor W. L. Ducker, head of the department of petroleum engineering. The night was clear and dark. Suddenly all three men saw a number of lights race noiselessly across the sky, from horizon to horizon, in a few seconds. They gave the impression of about 30 luminous beads, arranged in a crescent shape. A few moments later another similar formation flashed across the night. This time the scientists were able to judge that the lights moved through 30 degrees of arc in a

second. A check the next day with the Air Force showed that no planes had been over the area at the time. This was but the beginning: Professor Ducker observed 12 flights of the luminous objects between August and November of last year. Some of his colleagues observed as many as 10. Hundreds of nonscientific observers in a wide vicinity around Lubbock have seen as many as three flights of the mysterious crescents in one night. On the night of Aug. 30 an attempt to photograph the lights was made by 18-year old Carl Hart Jr. He used a Kodak 35-mm camera at f3.5, 1/10 of a second. Working rapidly, Hart managed to get five exposures of the flights. The pictures exhibited by Hart as the result of this effort show 18 to 20 luminous objects, more intense than the planet Venus, arranged in one or a pair of crescents. In several photographs, off to one side of the main flight, a larger luminosity is visible –like a mother craft hovering near its aerial brood.



Carl Hart, 18-year-old student, photographed the Lubbock Lights with Kodak 35.



Professors at Texas Tech who saw Lubbock Lights (left to right), Dr. Oberg, Prof. Ducker, and Dr. Robinson, discuss them with Dr. E. L. George.

EVALUATION

The observations have been too numerous and too similar to be doubted. In addition the Air Force, after the closest examination, has found nothing fraudulent about Hart's pictures. The lights are much too bright to be reflections, and therefore bodies containing sources of light. Since Professors Ducker, Oberg, and Robinson could not measure the size and distance of the formations, they could form no precise estimate of their speed. However they calculated that if the lights were flying at an altitude of 5,000 feet they must then have been traveling about 1,800 mph. [The professors, along with other scientists](#), agree that in order to explain the silence of the objects, it must be assumed that they were at 50,000 feet in the air; in which case they were going not 1,800 but 18,000 mph.

INCIDENT 2

On July 10, 1947 at 4:47 p.m., one of the U.S.'s top astronomers was driving from Clovis to Clines Corners, N. Mex. [Subsequently revealed to be Dr. Lincoln LaPaz, investigator of [Incident 10](#), the mysterious green fireballs.] His wife and his teen-aged daughters were also in the car. (For professional reasons he has asked **LIFE** to withhold identity.) It was a bright sunny day, but the whole western half of the sky was a "confused cloud sea." All at once, as the car headed toward these clouds, "all four of us almost simultaneously became aware of a curious bright object almost motionless" among the clouds. Instantly, from long habit in dealing with celestial phenomena, he began to make calculations. with what crude materials he had at hand. He held a pencil at arm's length, measured the size of the object against the windshield of the car, measured the distance between his eyes and the windshield, etc. His wife and two daughters did the same, each making independent calculations. The object, says the scientist, "showed a sharp and firm regular outline, namely one of a smooth elliptical character much harder and sharper than the edges of the cloudlets... The hue of the luminous object was somewhat less white than the light of Jupiter in a dark sky, not aluminum or silver-colored.... The object clearly exhibited a sort of wobbling motion... This wobbling motion served to set off the object as a rigid, if not solid body." After 30 seconds in plain view, the ellipsoid moved slowly behind a cloud (273 degrees azimuth, elevation 1 degree) "and we thought we had lost it." But approximately five seconds later it reappeared (275 degrees azimuth, elevation 2 degrees). "This remarkably sudden ascent thoroughly convinced me that we were dealing with an absolutely novel airborne device." After reappearing, the object moved slowly from south to north across the clouds. "As seen projected against these dark clouds, the object gave the strongest impression of self-luminosity." About two and a half minutes after it first came into view, the thing disappeared finally behind a cloudbank.

EVALUATION

The astronomer vouches for the approximate accuracy of his observations and computations. He determined that the object was not less than 20 nor more than 30 miles from his viewing point; that it was ellipsoidal and rigid; that it was 160 feet long and 65 feet thick, if seen at minimum distance; or 245 feet long and 100 feet thick if at maximum; and that its horizontal speed ranged between 120 and 180 mph and its vertical rise between 600 and 900 mph. He also observed that the object moved with a wobble, no sounds, and left no exhaust or vapor trail. His wife and daughters support his observations, and their computations were in accordance with his own, though slightly less conservative. The object's appearance and behavior answer no known optical or celestial phenomenon. No known or projected aircraft, rocket or guided missile can make

such a rapid vertical ascent without leaving an exhaust or vapor trail.



A U.S. rocket is launched from a proving ground. Neither this nor any known U.S. missiles fit the descriptions of the sighted saucers and fireballs.

INCIDENT 3

On April 24, 1949 at 10:20 a.m., a group of five technicians under the general supervision of J. Gordon Vaeth, an aeronautical engineer employed by the Office of Naval Research, were preparing to launch a Skyhook balloon near Arrey, N. Mex. A small balloon was sent up first to check the weather. Charles B. Moore Jr., an aerologist of General Mills Inc. (pioneers in cosmic ray research) was tracking the weather balloon through a theodolite – a 25-power telescopic instrument, which gives degrees of azimuth and elevation (horizontal and vertical position) for any object it is sighted on. At 10:30 a.m. Moore leaned back from the theodolite to glance at the balloon with his naked eye. Suddenly he saw a whitish elliptical object, apparently much higher than the balloon, and moving, in the opposite direction. At once he picked the object up in his theodolite at 45 degrees of elevation and 210 degrees of azimuth, and tracked it east at the phenomenal rate of 5 degrees of azimuth-change per second as it dropped swiftly to an elevation of 25 degrees. The object appeared to be an ellipsoid roughly two and a half times as long as it was wide. Suddenly it swung abruptly upward and rushed out of sight in a few seconds. Moore had tracked it for about 60 seconds altogether. The other members of his crew confirmed his report. No sound was heard, no vapor trail was seen. The object, according to rough estimations by Moore and his colleagues, was about 56 miles above the earth, 100 feet long and was traveling at seven miles per second.

EVALUATION

No known optical or atmospheric phenomenon fits the facts. A natural object traveling at seven miles per second has never been seen to make a sudden upward turn. There is no known or projected source of silent, vaporless power for such a machine. No human being could have borne the tremendous "G" load brought to

bear on the craft during its abrupt vertical veer.

INCIDENT 4

One night in the summer of 1948 [August 20, 1949] Clyde W. Tombaugh, the discoverer of the planet Pluto, was sitting in the back yard of his home at Las Cruces, N. Mex. With him were his wife and his mother-in-law. It was about 11 p.m. and they were all sitting quietly, admiring the clarity of the southwestern sky, like any proper astronomical family. All at once they all saw something rush silently overhead, south to north, too fast for a plane, too slow for a meteor. It seemed to be quite low. All three of the witnesses agreed that the object was definitely a solid "ship" of a kind they had never seen before. It was of an oval shape and "seemed to trail off at the rear into a shapeless luminescence." There was a blue-green glow about the whole thing. About half a dozen "windows" were clearly visible at the front of the ship and along the side. They glowed with the same blue-green color as the rest of the ship, only the glare was brighter, and had a touch of yellow in it.

EVALUATION

The object bore a resemblance to the craft seen by Pilots Chiles and Whitted. It bore resemblance to no aircraft known to be in operation on earth.

INCIDENT 5

In this case **LIFE's** informant is an Air Force officer who holds a top military post at a key atomic base. Since his assignment and whereabouts must be kept a secret he has asked **LIFE** to withhold his name. He has the highest security rating given. Before he took his present assignment, this officer was in command of the radar equipment that keeps watch over a certain atomic installation. One day in the fall of 1949, while watching a radarscope that covered an area of sky 300 miles wide and 100,000 feet deep, he was startled to detect five apparently metallic objects flying south at tremendous speed and great height. They crossed the 300-mile scope, in less than four minutes. The objects flew the whole time in formation.

EVALUATION

There is no dead-certain explanation of this phenomenon – radar is as full of tricks as an old-maid's imagination. However, the officer involved is an experienced observer, well aware of the eccentricities of the instrument. He believes that in this instance he made a legitimate radar contact. If so, it can be said that the only natural objects known to travel at such a speed are meteors, but meteors do not fly in formation. If the officer picked up machines, they were performing in a manner that rocket experts agree is still beyond the capabilities of earth's most advanced weapons.



"Civilian Saucer Investigations" was organized by Sighter Ed J. Sullivan (standing), who urges other sighters to write to P.O. Box 1971, Main Post Office, Los Angeles. CSI includes Dr. Walter Riedel (behind Sullivan), who was chief designer at great German rocket laboratory at Peenemunde.

INCIDENT 6

On May 29, 1951 at 3:48 p.m., three technical writers for the aerophysics department of North American Aviation's plant at Downey, outside Los Angeles, were chatting on the factory grounds. They were Victor Black, Werner Eichler and Ed J. Sullivan. All at once they stared at the sky. Sullivan describes what they saw: "Approximately 30 glowing, meteorlike objects sprayed out of the east at a point about 45 degrees above the horizon, executed a right-angle turn and swept across the sky in an undulating vertical formation. . . that resembled a tuning fork on edge. It took each of them about 25 seconds to cross 90 degrees of the horizon before performing another right-angle turn westward toward downtown Los Angeles.... We estimated their diameter at 30 feet and their speed to be 1,700 mph. Each appeared as an intense electric blue light, round and without length. They moved with the motion of flat stones skipping across a smooth pond."

EVALUATION

No known natural or optical phenomenon, makes the peculiar light, in bright day, attributed to these objects by Sullivan and his colleagues; nor can any natural object, hurtling at such a speed, execute a right angle turn. As in the Moore theodolite sighting, the execution of such a turn would have crushed any human crew under the impact of "G" forces. Finally, of course, no known machine travels at 1,700 mph without making a sound or leaving an exhaust or vapor trail.

INCIDENT 7

On Jan. 20, 1951, at 8:30 p.m., Captain Lawrence W. Vinther of Mid-Continent Airlines was ordered by the control tower at the Sioux City airport, to investigate a "very bright light" above the field. He took off in his DC-3 with his copilot, James F. Bachmeier, and followed the light. All at once the light dived at the DC-3

almost head on; it passed silently and at great speed about 200 feet above its nose. Both pilots wrenched their heads back to see where it had gone, only to discover that the thing had somehow reversed direction in a split second and was now flying parallel to the airliner heading in the same direction. It was a clear moonlight night and both men got a good look at the object. It was as big or bigger than a B-29, had a cigar-shaped fuselage and a glider-type wing, set well forward, without sweepback and without engine nacelles or jet pods. There was not exhaust glow. The white light appeared to be recessed in the bottom of the plane. After a few seconds the object lost altitude, passed under the DC-3 and disappeared. A civilian employee of Air Intelligence was a passenger on the flight, saw the object and confirms the description by the pilots.

EVALUATION

The conditions for observation were excellent. One fact alone – the astonishing reversal of direction performed by the object – suffices to classify it as a device far beyond the known capacities of aeronautical science. Although its shape is different, the soundlessness of the object and the absence of observable means of propulsion relate it to the saucer class of phenomena.

INCIDENT 8

At 6:45 a.m., just before sunup on Feb. 18, 1952, a photographer named C. E. Redman was driving through Albuquerque, N. Mex. on his way to photograph a wedding. Stopped for a traffic light, he noticed two bright things in the sky. "They were hovering above Tijeras Canyon.... The one to the north was on its edge. The other was lying horizontally. They were bright, bluish white.... It was probably the most astonishing thing I've ever seen. Those things were soundless. They were not jets or vapor trails. I've seen hundreds of jets and vapor trails." Redman was questioned later the same day by a **LIFE** reporter and a prominent scientist, working together. From his testimony, and from the lay of the land, it was estimated that the disks were 20 miles away and four miles in the air, and that they had a diameter of about 136 feet. Another witness saw the same objects Redman saw, and at the same time, but from the other side of town. W. S. Morris, a retired master sergeant of the Air Force who is now a newsdealer in Albuquerque, was out to drop off his morning papers when he saw two strange objects over Tijeras Canyon. "I watched them for 12 minutes. They were a blinding silver, long and thin, gleaming all over. They hovered, one kind of above the other to the right. They seemed brighter than the sun, which wasn't yet over the Sandia mountains. It just touched their bottoms and they glowed red. They didn't flutter or move. They just hung there. It must have been 20 miles away. Then they just suddenly dropped down behind the mountain, and the upper one tilted so that I could see its profile. It looked like a bell pepper-with a bump on top, that is."

EVALUATION

Kirtland AFB acknowledged that there were no aircraft in that area at that time. The observations reinforce each other and point to several striking facts. First, one disk proved itself three dimensional when it tilted, to descend. Second, the suddenness of the disk's descent indicates that the bodies contained a source of power. Third, the power that can suspend a three-dimensional body, of the size Morris describes and in the position he indicates, without turning a blade or roaring a jet, is unknown.



How discs looked in relation to each other is shown by C.E. Redman of Albuquerque.

INCIDENT 9

On Jan. 29, 1952, just before midnight, a B-29 was on solo mission over Wonsan, Korea. It was flying at a speed somewhat less than 200 miles an hour, at an altitude somewhat above 20,000 feet. Simultaneously the tail gunner and the fire-control man in the waist saw a bright round orange object in the sky near the plane. Both said it was about three feet in diameter, flew with a revolving motion on a course parallel to theirs, and wore a halo of bluish flame. It also appeared to pulsate. The object followed the B-29 for about five minutes, then pulled ahead and shot away at a sharp angle. On the same night a similar globe was seen by the tail gunner and waist man of another B-29, 80 miles away over Sunchon, but flying at about the same height. The globe followed the plane for about a minute, then disappeared.

EVALUATION

Theoreticians in the Air Force believe the fireballs were not natural phenomena but propelled objects. They bear some similarity to the balls of fire called "fireball fighters" or "foo fighters" – which flew wing on Allied aircraft over Germany and Japan during 1944-45 and which have never been satisfactorily explained. In the Korean incidents, the fireballs seem – on the evidence of their sharp acceleration, their blue light and their abrupt, angular swerve – to resemble the saucers described earlier.



The same disks sighted by Redman were seen by W.S. Morris, ex-Air Force master sergeant

INCIDENT 10

On the night of Nov. 2, 1951 a ball of kelly-green fire, larger than the moon, and blazing several times more brightly, flashed eastward across the skies of Arizona. It raced, straight as a bullet, parallel to the ground, and then exploded in a frightful paroxysm of light — without making a sound. At least 165 people saw the incredible thing; hundreds more witnessed the similar flight of countless other fireballs that since December 1948 have bathed the hills of the Southwest in their lunar glare. In the last year they have been seen as far afield as Pennsylvania, Maryland and Puerto Rico. The chief Air Intelligence officer for the Albuquerque district saw one. Colonel Joseph D. Caldara, USAF, attached to the Joint Chiefs of Staff, saw one in Virginia. Hundreds of pilots, weather observers and atomic scientists have sighted them. Reports came so thick and fast during 1948 that in 1949 [April 1, 1950] the Air Force established "Project Twinkle" to investigate them. Project Twinkle established a triple phototheodolite post at Vaughn, N. Mex. to obtain scientific data on the fireballs. Day and night, week in, week out, for three months [six months], a crew kept vigil. Ironically, while fireballs continued flashing everywhere else in the Southwest, they saw nothing until the project was transferred to the Holloman Air Force Base at Alamogordo, N. Mex. There, during another three-months siege, they saw a few but were unable to make satisfactory computations because of the fireballs' great-speed. Search parties have had no better luck. They have combed in vain the countryside beneath the point of disappearance; not a trace of telltale substance has been found on the ground.

EVALUATION

The popular Southwest belief that a strange meteor shower was underway has been blasted by Dr. Lincoln LaPaz, mathematician, astronomer and director of the Institute of Meteoritics at the University of New Mexico. He points out that normal fireballs do not appear green, they fall in the trajectory forced on them by gravity, are generally noisy as a freight train, and leave meteorites where they hit. The green New Mexican species does none of these things. Neither do the green fireballs appear to be electrostatic phenomena — they move too regularly and too fast

*If the fireballs are the product of a U.S. weapons project, as some Southwesterners believe, it is a very secret one indeed: the Atomic Energy Commission and every other government agency connected with weapons development has denied to **LIFE** any responsibility for the fireballs.*

Could they be self-destroying Russian reconnaissance devices? Not likely. While the U.S. believes the Russians have an intercontinental guided missile, there is no intelligence that indicates they have developed silent power plants or objects capable of moving nearly as fast as meteors (12 miles a second). Yet – for whatever it may be worth – the only reports of green fireballs prior to 1948 came from the Baltic area. If the fireballs do not respond to gravity, they could only be explained as lighter-than-air craft or electrical phenomena – but they have characteristics which rule these out. Therefore they must be propelled. If propelled and not natural phenomena, they must be artificial. The extreme greenness of the fireballs has impressed most witnesses. When asked to indicate the approximate color on a spectrum chart, most of them have touched the band at 5,200 angstroms, close to the green of burning copper. Copper is almost never found in meteorites; the friction of the air oxidizes it shortly after the meteor enters the upper atmosphere. However, a curious fact has been recorded by aerologists. Concentrations of copper particles are now present in the air of Arizona and New Mexico, particularly in "fireball areas." These were not encountered in air samples made before 1948.

WHAT THEY ARE NOT – AND WHAT THEY MAY BE

What are the flying saucers, the luminous fuselages, the foo fighters and the green fireballs? The answer – if any answer at this time is possible – lies in the field of logic rather than of evidence. What the things are may be adduced partially by reviewing what they are not.

THEY ARE NOT PSYCHOLOGICAL PHENOMENA. Although the Air Force cheerily wrote off its 34 unexplained incidents with this pat theory, the explanation does not hold up. There is no evidence, beyond textbook speculation, for such a supposition, and there is the direct evidence already cited against it. To doubt the observers in the foregoing cases is to doubt the ability of every human being to know a hawk from a handsaw.

THEY ARE NOT THE PRODUCT OF U.S. RESEARCH. **LIFE** investigated this possibility to exhaustion. Not fully satisfied by the public denials of President Truman, Secretary Johnson and others, the investigators put the question directly to Gordon Dean, chairman of the Atomic Energy Commission. He said: "There's nothing in our shop that could account for these things, and there's nothing going on that I know of that could explain them." Still unconvinced, **LIFE** checked the whereabouts and present business of every scientist who might have anything to do with the development of superaircraft. All were accounted for in other ways. Careful feelers through the business and labor world encountered no submerged projects of the immensity necessary to build a fleet of flying disks. And there is still the conclusive fact: U.S. science has at its command no source of power that could put a flying machine through such paces as the saucers perform.

THEY ARE NOT A RUSSIAN DEVELOPMENT. It is inconceivable that the Russians would risk the loss of such a precious military weapon by flying a saucer over enemy territory. No man-made machine is foolproof; sooner or later one would crash in the U.S. and the secret would be out. Nor is there any reason to believe that Russian science, even with German help, has moved beyond not only the practical but the **THEORETICAL** horizons of U.S. research.

THEY ARE NOT DISTORTIONS OF THE ATMOSPHERE RESULTING FROM ATOMIC ACTIVITY. To quote the answer David Lilienthal, former AEC commissioner, once made to that suggestion: "I can't prevent anyone from saying foolish things." Nor are they aberrations of the northern lights. Magnetic disturbances cannot account for them and neither can a notion (recently fathered by Dr. Urner Liddel, the Navy physicist) that they are "vertical mirages" – reflections from a vertical (instead of a horizontal) layer of heated air.

THEY ARE NOT SKYHOOK BALLOONS. This was the original Liddel explanation, and in a few instances it may have been correct. But not many. They could scarcely be "fireflies in the cockpit," as one Air Force colonel suggested, since most of the observers were not in a cockpit when they saw their saucers. And it is hard to believe that saucers could be the reflections of automobile headlights on clouds, when they are seen in daylight under cloudless skies. These being the dead-end alleys of negative evidence, is there hope of an explanation on the open avenues of scientific theory? The answer is yes.

The rank of science has taken the saucers far more seriously than the file of laymen and, after five years of close watch on all reports, a number of scientists were ready with some conclusions. One of these was Dr. Walther Riedel, once chief designer and research director at the German rocket center in Peenemunde, now engaged on secret work for the U.S. Dr. Riedel has never seen a saucer himself, but for several years he has kept records of saucer sightings all over the world. He told **LIFE**: "I am completely convinced that they have an out-of-world basis."

Dr. Riedel has four points to his argument: "First, the skin temperatures of structures operating under the observed conditions would make it impossible for any terrestrial structure to survive. The skin friction of the missile at those speeds at those altitudes would melt any metals or nonmetals available.

"Second, consider the high acceleration at which they fly and maneuver ... In some descriptions the beast spirals straight up. If you think of the fact that the centrifugal force in a few minutes of such a maneuver would press the crew against the outside, and do likewise to the blood, you see what I mean.

"Third.... There are many occurrences where they have done things that only a pilot could perform but that no human pilot could stand.

"Fourth, in most of the reports there is a lack of visible jet. Most observers report units without visible flame...and no trail. If it would be any known type of jet, rocket, piston engine, or chain-reaction motor, there would be a very clear trail at high altitude. It is from no power unit we know of..."

Dr. Riedel's arguments are reinforced by those of Dr. Maurice A. Biot, one of the leading aerodynamicists in the U.S. and a prominent mathematical physicist. From an aerodynamical viewpoint, says Dr. Biot, the saucer shape makes very little sense if the machine is to travel in the atmosphere. A disk has a high drag and is a poor airfoil unless stabilized; when whirled at high speed through the air, it "wobbles" distressingly – a movement observed in several of the saucers sighted. However, for space travel, where there is no atmosphere to oppose, the disk has significant advantages. The sphere, theoretically better, presents several difficult problems of construction and utilization. The disk, easier to build, has almost all the virtues of the sphere and some of its own. Reviewing the evidence presented here, Dr. Biot said: "The least improbable explanation is that these things are artificial and controlled. . .My opinion for some time has been that they

have an extraterrestrial origin."

WHO? WHAT? AND WHEN?

There, at least, is a plausible explanation of the disk shape. But the real depths of the saucer mystery baffle penetration, as the night sky swallows up a flashlight beam. What of the other shapes? Why do the things make no sound? How to explain their eerie luminosity? What power urges them at such terrible speeds through the sky? Who, or what, is aboard? Where do they come from? Why are they here? What are the intentions of the beings who control them?

Before these awesome questions, science – and mankind – can yet only halt in wonder. Answers may come in a generation – or tomorrow. Somewhere in the dark skies there may be those who know.