

the apro bulletin

The A.P.R.O. Bulletin is the official copyrighted publication of the Aerial Phenomena Research Organization, Inc., (A.P.R.O.), 3910 E. Kleindale Rd., Tucson, Arizona 85712, and is issued every month to members and subscribers. The Aerial Phenomena Research Organization, Inc., a non-profit corporation established under the laws of the State of Arizona and a federally recognized scientific and educational tax-exempt organization, is dedicated to the eventual solution of the phenomenon of unidentified flying objects. Inquires pertaining to membership and subscription may be made to the above address.

VOL. 24, NO. 5

TUCSON, ARIZONA

NOVEMBER 1975

THE TRAVIS WALTON CASE

On the morning of the 6th of November, 1975, Arizonans were electrified by the news that, on the night before, a young Northern Arizona woodcutter had "disappeared in a flash of light emitted by a UFO". The initial news releases out of Heber and Holbrook were somewhat erroneous and later pronouncements by individuals who had no real knowledge of the facts, muddled the waters, but information that has been obtained by APRO will be set forth at this time. Additional information resulting from various tests of the prime witnesses will be presented when the case is fully developed.

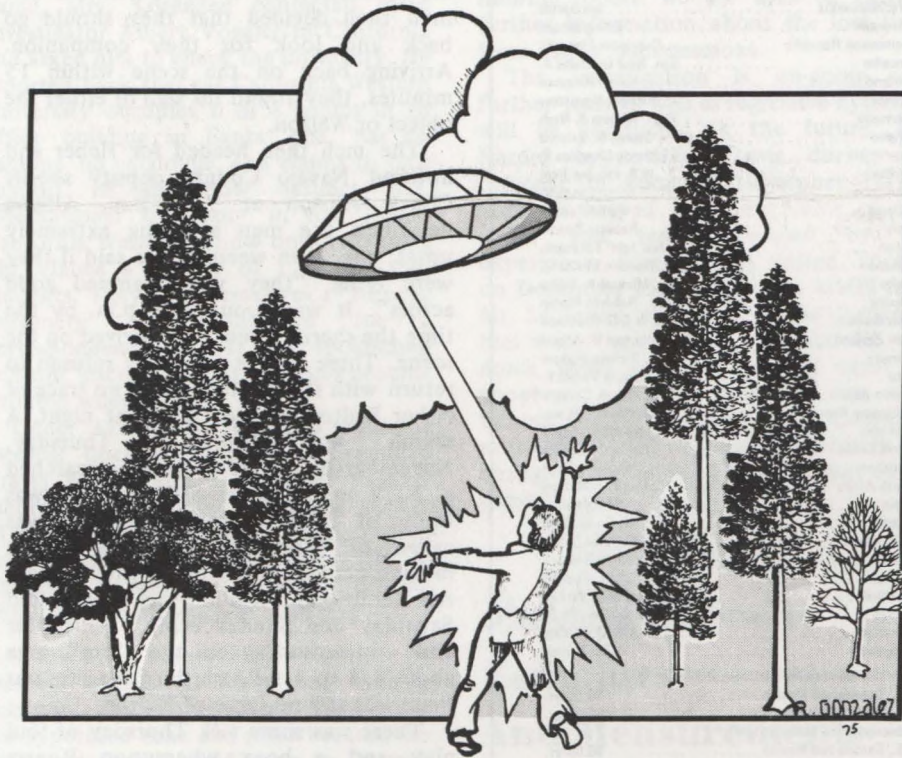
It is the main attempt of this presentation to set the record straight on behalf of Travis Walton, who has been harrassed and lied about by some individuals in the media and UFO buffs as well. Field Investigator Raymond Jordan's report gives us the salient facts:

At about 6:15 p.m. on November 5th, Michael Rogers was driving his 1964 International crew-cab truck along a rough logging road in the Apache-Sitgreaves National Forest about 15 miles south of Heber, Arizona. Rogers and his crew had been working with chain saws all day, thinning trees and piling the residue (slash) for later burning. The crew was under contract to the U. S. Forest Service and consisted of Rogers, 28, Travis Walton, 22, Ken Peterson, 25, Duane Smith, 19, Allen Dalis, 21, John Goulette, 21, and Steve Pierce, 17.

After leaving the area they had been working, they had travelled only a couple of hundred yards when Dalis spotted a yellowish glow ahead of them and to the right through a heavy growth of pine trees. Travis, who was sitting on the right in the front seat, with Peterson between him and Rogers, later said he at first thought it was the sunset until he realized it was in the northwest.

The truck continued to bump along the right-hand curve winding up the hill at about 5 miles per hour until they came to a clearing where they had a very close, clear view of a startling sight. Approximately 75-90 feet to their right was a glowing object hovering silently about 15-20 feet above a pile of slash. The object appeared about the same size

(See Walton - Page Two)



Artist's Conception of Travis Walton's Initial Experience

UFO Report Update

Our radio show "UFO Report" is now on the air in various parts of the country. We will publish an up-to-date list of participating stations when available. Hal Starr reports that at last count there had been contracts requested by 173 stations wishing to carry the show.

If the show is still not being carried in your area, call your local station and tell them about it. Tell them they can obtain an audition disc by writing:

Creative Radio Shows
9121 Sunset Blvd.
Los Angeles, California 90069
Or they may call 213-276-5022.

Address Changes

Please send old and new zip codes when forwarding address changes. Thank you!

UFO Alert

UFO Alert is still in effect. If a member or Field Investigator learns of a case (within a day or two of its occurrence) involving occupants, landings or landing traces, he or she may inform Headquarters via long distance collect. Please have your data well organized so that you can relate the information in the shortest space of time, thus keeping phone costs to a minimum.

Oversight

In the beginning of the book review on page 2 of the October Bulletin, Mr. Benz failed to include the following pertinent information: Hynek, Joseph Allen, & Vallee, Jacques; "The Edge of Reality: A progress Report on Unidentified Flying Objects. Chicago, Regnery, 1975. 288 p., photogs., index.

THE A.P.R.O. BULLETIN

Copyright 1976 by the

AERIAL PHENOMENA

RESEARCH ORGANIZATION, INC.

3910 E. Kleindale Road

Tucson, Arizona 85712

Phone: 602 - 793-1825 and 602 - 326-0059

Coral E. Lorenzen, Editor

R. Michael Rasmussen, Assistant Editor

Norman Duke, Richard Beal,

Brian James, Lance P. Johnson, Artists

Robert Gonzales

A.P.R.O. STAFF

International Director L.J. Lorenzen
 Director of Research James A. Harder, Ph.D.
 Public Relations Hal Starr
 Secretary-Treasurer Coral E. Lorenzen
 Membership Secretary Madeleine H. Cooper
 Staff Librarian Allen Benz
 Office Manager Sheila Kudrle

CONSULTING PANELS

Biological Sciences

Anatomy Kenneth V. Anderson, Ph.D.
 Biochemistry Vladimir Stefanovich, Ph.D.
 Biophysics John C. Munday, Ph.D.
 Botany Robert J. Hudek, Ph.D.
 Botany Robert Mellor, Ph.D.
 Exobiology Frank B. Salisbury, Ph.D.
 Microbiology Mohammed A. Athar, Ph.D.
 Physiology Harold A. Cahn, Ph.D.
 Zoology Richard Etheridge, Ph.D.
 Zoology Burton L. Moore, Jr., Ph.D.

Medical Science

Medicine Louis E. Daugherty, M.D.
 Medicine Benjamin Sawyer, M.D.
 Medicine R. Donald Woodson, M.D.
 Psychiatry Jule Eisenbud, M.D.
 Psychiatry L. Gerald Lauffer, M.D.
 Psychiatry Berthold E. Schwarz, M.D.

Physical Sciences

Aeronautics Rayford R. Sanders, M.S.M.E.
 Astronomy Daniel H. Harris, B.S.
 Astronomy Leo V. Standeford, Ph.D.
 Astronomy Walter N. Webb, B.S.
 Astrophysics Richard C. Henry, Ph.D.
 Civil Engineering James A. Harder, Ph.D.
 Civil Engineering Charles E. Martin, B.S.
 Computer Technology Vlastimil Vysin, Ph.D.
 Electrical Engineering Kenneth Hessel, Ph.D.
 Electrical Engineering Brian W. Johnson, Ph.D.
 Geochemistry Harold A. Williams, Ph.D.
 Geology Philip Seff, Ph.D.
 Mechanical Engineering Arlan K. Andrews, Sc.D.
 Metallurgy Robert W. Johnson, Ph.D.
 Metallurgy Walter W. Walker, Ph.D.
 Oceanography Dale E. Brandon, Ph.D.
 Optics B. Roy Frieden, Ph.D.
 Physics Michael J. Duggin, Ph.D.
 Physics Richard F. Haines, Ph.D.
 Physics Gerhard H. Wolter, Ph.D.
 Physics Robert M. Wood, Ph.D.
 Radiation Physics Horace C. Dudley, Ph.D.
 Seismology John S. Derr, Ph.D.

Social Sciences

History David M. Jacobs, Ph.D.
 Linguistics P.M.H. Edwards, Ph.D.
 Philosophy Norman J. Cockburn, Ph.D.

Philosophy Robert F. Creegan, Ph.D.
 Philosophy Emerson W. Shideler, Ph.D.
 Philosophy Kathleen M. Squadrito, Ph.D.
 Psychology Terry L. Maple, Ph.D.
 Psychology Michael A. Persinger, Ph.D.
 Psychology R. Leo Sprinkle, Ph.D.

REPRESENTATIVES

Argentina Guillermo Gainza Paz
 Australia Peter E. Norris
 Belgium Edgar Simons
 Bolivia Fernando Hinojosa V.
 Brazil Prof. Flavio Pereira
 Britain Anthony R. Pace
 Ceylon K.P.K. DeAbrew
 Chile Pablo Petrowsich S.
 Colombia John Simhon
 Costa Rica Rodolfo Acosta S.
 Cuba Oscar Reyes
 Czechoslovakia Jan Bartos
 Denmark Erling Jensen
 Dominican Republic Guarionix Flores L.
 Ecuador Gen. Raul Gonzales A.
 Finland Kalevi Hietanen
 France Richard Niemtzw
 Germany Capt. William B. Nash
 Greece George N. Balanos
 Guatemala Eduardo Mendoza P.
 Holland W.B. van den Berg
 Honduras Julian Lanza N.
 Ireland Martin Feeney
 Italy Roberto Pinotti
 Japan Jun'ichi Takanashi
 Lebanon Menthis El Khatib
 Malta Michael A. Saliba
 Mexico Roberto Martin
 New Guinea Rev. N.C.G. Crutwell
 New Zealand Norman W. Alford
 Norway Richard Farrow
 Peru Joaquin Vargas F.
 Puerto Rico Frank Cordero
 Philippine Republic Col. Aderito A. deLeon
 Rumania Tiberius A. Topot
 Sierra Leone Bernard J. Dodge
 Singapore Yip Mien Chun
 South Africa Frank D. Morton
 Spain Pedro Redon
 Sweden K. Gosta Rehn
 Switzerland Or. Peter Creola
 Taiwan Joseph March
 Tasmania William K. Roberts
 Trinidad Eurico Jardim
 Turkey Adnan Gur, Ph.D.
 Venezuela Jose M. Pascual
 Yugoslavia Milos Krmelj

A.P.R.O. Membership including Bulletin:

U.S., Canada and Mexico \$8.00/yr.

All other countries \$9.00/yr.

Subscription to Bulletin Only:

U.S., Canada and Mexico \$8.00/yr.

All other countries \$9.00/yr.

Newspires, newspapers, radio and television stations may quote up to 250 words from this publication, provided that the Aerial Phenomena Research Organization, Inc. (or A.P.R.O.), Tucson, Arizona, is given as the source. Written permission of the Editor must be obtained for quotes in excess of 250 words.

flung out and head knocked back. Rogers, who was looking the other way as he started the engine, saw the flash reflected from the trees on the other side of the road and looked around just in time to see Walton in the air. Rogers and the other men, terrified, sped from the scene. Only one man actually saw Walton hit the ground. The whole incident took less than 1 minute.

About a quarter mile away they stopped to consider the situation. Rogers then saw through the trees, in the direction from which they came, a light lift up and streak to the northeast. The men then decided that they should go back and look for their companion. Arriving back on the scene within 15 minutes, they found no sign of either the object or Walton.

The men then headed for Heber and notified Navajo County deputy sheriff Chuck Allison at 7:35 p.m. Allison described the men as being extremely upset; one, even weeping. He said if they were lying, "they were damned good actors". It was about 9:30 p.m. by the time the sheriff's personnel arrived on the scene. Three of the witnesses refused to return with them. They found no trace of either Walton or the UFO that night. A search was conducted Thursday, November 6. About 40-50 men searched a 2-1/2 mile radius. Still no sign was found of Travis Walton. The search was called off Thursday afternoon and a missing persons bulletin was filed Friday. An additional search was conducted Saturday and Sunday using a helicopter and concentrating on the "rim" area about 1/4 to 1 mile south of the site, but there was still no trace of Walton.

There was some talk Thursday of foul play and a hoax whereupon Rogers requested a polygraph test be given the 6 witnesses. The tests were administered Monday, November 10, in Holbrook by the Arizona Department of Public Safety polygraph expert, Cy Gilson. Five of the men passed the test. The other test was reported "inconclusive". Gilson thought that perhaps Dalis did not watch the entire incident. There can be no doubt that the men at least think they saw what they said they saw. Gilson considers it impossible for this many subjects to slip through the test while lying.

Mr. Jordan interviewed each of the men and Rogers at the scene of the sighting. All agreed on the basic details. However, Rogers, whom he interviewed on Saturday, November 8, was visibly shaken - especially when describing the flash hitting Walton, who had been a friend for about 12 years.

Sighting Condition and Weather: The sky was clear and dark with a glow in the west from the sun which had already set. The object was seen to the northwest of the observers. The moon was a thin sliver high in the sky.

(See Walton - Page Three)

Walton

(Continued from Page One)

as the pile - about 15 feet in diameter and approximately 8 feet high. It glowed with a color "like that of a Coleman lantern just being lit". This glow was broken by dark, opaque "dividers" or framework (see drawing based on witnesses' sketches).

When they spotted the object, Travis yelled to Rogers to stop, and not waiting for the truck to come to a full halt, he opened the door and jumped out and proceeded toward the object at a fast walk, stopping at the pile of slash.

Rogers, driving and not being able to see what the others were seeing, turned off the truck engine. While Walton went

toward the object, others in the truck heard a "beeping" noise which they described as sounding like the warning buzzer in the passenger compartment of a commercial airliner. As Walton stood looking up at the object the men heard a noise which one described as sounding like "a generator starting". Rogers also described additional rumbling noises. Meanwhile, the object started oscillating or wobbling about its vertical axis.

Walton stood under and just forward of the object for several seconds. Just as he took a step to walk around to the right of the pile, a bright, narrow ray of greenish-blue light struck Walton in either the head or chest. A bright flash surrounded his body. No sound was heard. This jolted Walton about a foot into the air and backwards with his arms

Walton

(Continued from Page Two)

Physical Evidence and Electromagnetic Phenomena: No physical evidence (landing pad imprints, broken branches, unusual footprints) was found at the scene. Mr. Jordan arrived on the scene early Saturday afternoon. Many searchers and others had already tramped around the area. No electromagnetic interference was noticed with the truck during the sighting. Deputy Allison said that the Sheriff's Department tested for radiation on Thursday, November 6 and found no significant readings above background level.

These, then, are the basic facts, but it is necessary to correct some misrepresentations carried widely by the press.

Also on the scene on Saturday was Bill Spaulding an investigator for "Ground Saucer Watch," his own outfit, located in Phoenix, as well as the Center for UFO Studies and MUFON. From the outset Spaulding was in touch with the media, feeding information to radio, television and newspaper offices.

On the morning of the 11th of November, at a few minutes after midnight, a telephone call was received at the home of the Grant Neffs (Mrs. Neff is Travis Walton's sister). The recipients didn't know who it was at first, as the caller sounded weak, vague and confused. After a few moments, however, the voice was identified as that of Travis. He said he was in a telephone booth at a service station in Heber.

Mr. Neff and Duane Walton (Travis' brother, who had left his business in Phoenix and gone to Snowflake to search for his brother and had stayed there) went to Heber where they found Travis slumped on the floor of the booth, which



Travis Walton



Travis Walton points to location of UFO

was 12 miles from the place where Travis had disappeared. They took him back to the Neff residence and little by little his story came out.

Travis Walton claims that when the light hit him it was like being hit over the head and that when he regained consciousness he was lying on a table, the ceiling seemed to be close to him, and light came from it. There was some sort of apparatus lying on his lower chest. He had considerable pain throughout his body, but mainly in his head. Around him were three entities, all about 5 feet tall, with large eyes, small noses, mouths and ears and without hair. Travis said they reminded him of human fetuses. They were all dressed in loose-fitting brown coveralls. The air in the room seemed heavy and moist and he had difficulty breathing.

He was panicked by his position and the strange creatures and knocked the apparatus off his chest, striking out at the creatures. The object rocked back and forth when it struck the floor. The creatures did not seem disturbed by his reaction and merely left the room, turning right in the corridor outside.

Then, he said, he went through the door and turned left down the corridor and into another room where he found a chair with push buttons on the arms, and the wall seemed transparent as he could see what he assumed were the stars. He sat in it and pushed some of the buttons whereupon the stars started to move so he left them alone.

Shortly thereafter, Travis said, a man, wearing blue clothing and a transparent

helmet, came into the room and gestured for Travis to go with him. He was smiling but did not respond to Travis' questions and attempts at conversation. He guided Travis out of the craft, through an "airlock", and down a ramp. Here the lighting was brighter, the air fresh, and he could breathe normally. He found himself in a large enclosure and saw several disc-shaped objects parked there, some of which were smooth and metallic in appearance.

His guide took him into another craft where he encountered three more "humans" (one woman and two men) who he said so closely resembled one another that they seemed to have been part of one family. They wore blue clothing but no helmets. The "human" with the helmet who brought him into this craft went on through and exited, without removing his helmet.

At this juncture, something resembling an oxygen mask was put over Travis' face and he lost consciousness.

When he regained consciousness he was lying on his back on a road. He could feel the cold of the road surface, and felt the heat of a disc-shaped object which was rising into the sky above him, the doors on the bottom just closing.

He said he recognized the road as the one leading into Heber, set out for town and when he got there, he called his sister's home.

When Duane and Travis Walton and Grant Neff arrived at the Neff home, Duane gave his brother fresh clothing and put the clothing he had been wearing into a bag. They will undergo a complete

(See Walton, Page Four)

Walton

(Continued from Page Three)

forensic analysis. He appeared thin, and weighed in on the bathroom scale at 154 lbs. He is six feet, one inch tall. He began drinking large quantities of water and ate some cottage cheese after which he complained of nausea. He continued to appear vague and confused.

Later in the morning, Duane decided to take his brother back to Phoenix and seek expert help. Because he had talked with Spaulding during Travis' absence, Duane called him when he arrived in Phoenix. He told Spaulding he felt Travis needed medical attention and requested a complete physical; however, Spaulding referred him to a Dr. Lester Steward, a hypno-therapist, located in the Westward Ho Hotel. They stayed at the man's office 15 or 20 minutes, during which time Steward tried to reach a doctor by phone but apparently could not locate one. Duane began to be suspicious of Dr. Steward's qualifications and took his brother home, stopping on the way for breakfast.

By that time the telephone jangled constantly with calls from the media, the curious and eventually two calls from Steward, apparently attempting to re-enter the case. Duane decided to take the pressure off by putting out a "cover" story to the effect that Travis had been taken to a hospital in Tucson. Phoenix APRO members had been keeping headquarters informed and Mrs. Lorenzen immediately checked all the Tucson hospitals. No one answering Travis Walton's description had been admitted that morning. She then decided that Travis was in all probability at the Duane Walton residence and put in a call. A woman answered and then Duane Walton took the phone.

Mrs. Lorenzen identified herself and APRO and told Walton that his brother's case was one of several currently under investigation and that APRO would like to provide anything we could to assist them. Duane said he thought his brother should be examined by a physician. Mrs. Lorenzen assured him it would be taken care of and then called two physicians in the Phoenix membership. One of the doctors was off duty that day and she left a message with his answering service and she reached the second Doctor at his clinic. He was free at 3:30 p.m. so she called Mr. Walton and gave him the names of the Doctors and told him that at least one would be at his home to examine Travis at 3:30 p.m. The second Doctor checked in shortly after she talked to Walton and she gave him the information and he agreed to contact the other Doctor and make arrangements to visit the Waltons that afternoon.

This time sequence is important because later Mr. Steward told the press

that he had interviewed the Waltons for two hours. Duane Walton claimed that he and his brother were only in Steward's office for 15 or 20 minutes, beginning at 9:30 a.m. It takes one half hour to drive from the Westward Ho Hotel where Steward's office is located to Duane Walton's home, and considering at least a half hour for breakfast, had the Waltons actually stayed two hours — from 9:30 to 11:30, as Steward claimed, they could not possibly have arrived home before 12:15. However, Mrs. Lorenzen made her first telephone contact with Duane Walton at 10:45 a.m., indicating that Duane Walton's version is the correct one.

Prior to Travis' reappearance, Spaulding's pronouncements to the press were to the effect that Ground Saucer Watch was seriously considering the case to be legitimate. He also said that tests he conducted at the site of the incident showed a "high degree of residual magnetism". (Phoenix Gazette, November 10, 1975).

Following the case chronologically, Mrs. Lorenzen was contacted by the National Enquirer at about noon on the 11th, asking her opinion of the case and she said that up to that point APRO considered it to be sound. She also voiced the opinion that Travis Walton was in no physical or emotional condition to confront the press and should be sequestered, but that although we could offer the services of experts to conduct needed tests, we could not assume financial responsibility for hotel accommodations and other expenses. The Enquirer's representative agreed to take care of that part of the project and Travis and Duane Walton were moved to a Phoenix hotel on Wednesday.

There have been rumors printed and repeated in the electronic media to the effect that Walton's mother, Mrs. Mary Kellet, had said after learning of Travis' disappearance that she didn't expect to see him again. That was not true. Statements by un-named residents in the Snowflake area to the effect that Travis and Mrs. Kellet were UFO buffs were also inaccurate. He had a mild interest in the subject and when asked why he approached the object he said simply that he was curious, which is an entirely normal reaction. His friend Mike Rogers told Mrs. Lorenzen that he himself had been skeptical about UFOs prior to the incident, but witnessing the incident convinced him.

On Thursday, November 13, Mr. Lorenzen drove to Phoenix where he met Dr. James Harder's (APRO's Director of Research) plane and the two proceeded to the hotel where they joined the Waltons and the National Enquirer crew. During that time, blood and urine analyses were undertaken by a Phoenix Laboratory. Also, Dr. Harder used hypnosis to alleviate the tension under

which Travis was laboring. The young man was found to be extremely upset and obviously tense. Meetings with Travis since then by both Mr. and Mrs. Lorenzen and other members of the local staff indicate considerable improvement although he becomes agitated when the subject of the lost time (which he doesn't remember) is broached.

Travis Walton is basically a quiet young man, intelligent and articulate but not given to volunteering information.

Two additional stories in the Phoenix Gazette on November 12th and 15th serve to elucidate the situation a bit. Billed as a Valley (Phoenix lies in a valley surrounded by mountains) expert on UFOs, Bill Spaulding was quoted as saying there "were some holes" in Travis's story, but the story neglected to point out what those "holes" were. He also said that Duane "accused him of being negative after we questioned him about a couple of holes in the story." He was also quoted as saying: "The thing that is at stake is the scientific community with respect to the entire UFO subject. Before anybody can say this is a hoax or this is the real thing, the proper scientific tests must be conducted — I of all people would like to see this turn out to be positive but the only way it can be done is with competent scientific personnel conducting scientific tests."

On the 13th, still making mileage with the press, Spaulding lamented the fact that Duane Walton refused to allow Travis to speak with Dr. Hynek of the "Center for UFO Studies." He claimed he had at first agreed to such a meeting, then changed his mind. "This is just too much," the Gazette quoted him saying, "We're going to blow this story out today."

Duane Walton hotly defended his brother saying that Spaulding had never interviewed his brother and called him a "publicity seeker and a glory hunter."

In another Gazette story on Page A-2 on Saturday, November 15th, "Dr." Steward told the Gazette in an "exclusive" interview that Travis Walton's story "is an absolute hoax." In the next sentence he said: "He was out hallucinating on some drug, probably LSD." Steward claimed that he spent two hours with Duane and Travis in his office and complained that they "demanded medical attention for Travis" and "wanted a complete physical and they wanted it for free." He also said he thought the 6 other witnesses "got together and beat the lie detector." "But they can't beat hypnosis," he said.

Meanwhile, Mr. Hal Starr, APRO's Director of Public Relations, decided to interview Steward for APRO's Radio program, "UFO Report" and contacted

(See Walton — Page Five)

Walton

(Continued from Page Four)

Steward for an interview. Steward was very cooperative and expansive until it came to discussing his medical training and/or experience, as well as his education; then he became vague. When pressed, he said his degree came from California Western University at Santa Ana, California. When a check of catalogues at the University of Arizona revealed no accredited university by that name, Mrs. Lorenzen contacted Field Investigator Albert Vogeler in California and asked him to check the university. He reported back that the California Western University occupies 6 or 8 rooms in an office building in Santa Ana, has no campus, no catalogue, and claims to be a spin-off of the now defunct U.S. International University in San Diego. California Western is now only two years old, claims a faculty of 12 and 1,000 students. They call themselves a "tutorial university" (a euphemism for a correspondence school) and spokesmen will not discuss accreditation and become irritated when asked.

Under APRO's auspices two reputable medical doctors (both MDs) examined Travis Walton and a reputable medical laboratory did blood and urine studies (Travis' first urination after he reappeared and blood drawn the afternoon of Tuesday, November 13) which revealed absolutely no evidence of drug use."

A few other points: Much was made of Duane's refusal to let Travis take a polygraph test. They did not show up at the appointed time and place because the press had literally laid siege to Duane's home and were camped at the building where the test was to be administered and Duane did not feel his brother was ready to face the press. His judgement was vindicated later by three psychiatrists including Dr. Jean Rosenbaum of Durango, Colorado, who said that a polygraph test at that time would be meaningless. The polygraph measures stress - not lies - and Travis Walton was in a very distressed state during the two weeks following his ordeal.

Since then, Dr. Harold A. Cahn, a physiologist and APRO's Consultant in Parapsychology has administered the Rorschach (inkblot) test and his report, on file with APRO, indicated that Travis Walton is not highly suggestible, and has good, normal basic personality structure. The Minnesota Multiphasic Personality Inventory test, conducted by Lamont McConnell (who holds an M.S. in psychology) indicates normality and no deviations which would point toward psychosis. The tests will be forwarded to Dr. R. Leo Sprinkle, APRO's Consultant in Psychology for further interpretation. APRO declines to identify the medical

doctors involved in the physical examination and laboratory work because it is felt at this time that their private and/or professional lives would be affected. Travis and Duane Walton have been harrassed almost beyond endurance by the press, radio and television as well as the curious and other organizations. They have expressed their confidence in APRO's expertise in the field of investigation and research, and have decided we should stay with the case exclusively until our consultants are satisfied with the results. It may be many months before we are able to extract further information about the lost time from Travis' subconscious.

The investigation is on-going and further tests as well as regressive hypnosis will be conducted in the future. Dr. Harder hypnotized Travis during his presence in Phoenix (November 13-16) and this helped to relieve some of the strain and tension caused by his experience. When Travis visited Tucson on December 16th to take the MMPI test, Mr. Lorenzen was struck by the change in him since their visit in Phoenix. He was much more relaxed and still eager to cooperate in every way. He was even talking with newsmen and Mr. Lorenzen notes that there has been absolutely no change in any detail of his account of his experience.

Making Intensity

Estimates

And Measurements

(Part IV)

Richard F. Haines, Ph.D.

(Continued from October Bulletin)

Estimating Luminous Intensity and Luminance:

There are two spatially distinct types of luminous sources: (a) point sources, and (b) extended sources. A point source (e.g., a star) obeys the "inverse square law" which states that the illumination at a point on a surface from a point source is proportional to the intensity of the source and inversely proportional to the square of the distance between them, for normal (90°) incidence (ref. 8). For most practical purposes, a source dimension to distance ratio of about 1:20 qualifies as a point source (ref. 1, pg. 11). Thus, a surface four feet from a candle will possess an illumination of 16 foot candles (ft-c). That is,

$E \text{ (ft-c)} = I \text{ (c)}/D^2 \text{ (square feet)} \text{ (1)}$
The metric measurement system (also known as the SI system for Systeme International) has now replaced the above English system (ref. 9). One ft-c = 10.764 lux (lx). The interested reader should

consult a modern physics text or the following references for other facts and conversion factors (refs. 1, 8, 9).

Point sources are measured in luminous intensity units while the luminous energy the source casts upon a surface is called illuminance. Illuminance is simply luminous energy per unit area incident upon a surface and is measured in lumen/m². One lm/cm² = 1 lux.

If a UFO is perceived as a point source at night it should, if at all possible, be compared with a star at a known and identifiable celestial location. This will make it possible for others to look up the star's intensity in astronomical tables. If the eye is dark-adapted for 20 minutes or more and a point source is invisible when viewed directly (i.e., foveally) but becomes just visible by looking approximately 10° arc to one side, then an estimate can be made of the point source's intensity by reference to psychophysical studies of retinal sensitivity.

Turning now to extended luminous sources, the sun, moon, a car's headlight viewed several feet away, or a town's floodlit water tank at night all constitute extended sources (despite the apparent violation of the 1:20 ratio rule stated above). However, the sun and the headlight emit luminous energy while the moon and the water tank reflect it. Extended sources are measured in luminance units regardless of whether they emit or reflect. For reflecting sources, luminance is simply the illuminance of the surface multiplied by its reflection factor. For emitting sources, luminance is the luminous energy (flux) per unit projected area of the source in the direction of view. Some of the numerous luminance units are: candela/square area, lambert, foot-lambert, apostilb. One candela = 1.018 International candles. A commonly used unit of luminance is cd/ft² which is calculated by:

$$B = \frac{(KE)}{\pi} \quad (2)$$

where: B = surface luminance (cd/ft²), K = surface reflection factor, and E = illuminance (ft-c). To simplify this relationship the foot lambert (ft-L) was established. One ft-L = 1/π cd/ft² so that equation 2 becomes B = KE, where BL = luminance in ft-L.

Neither luminous intensity nor luminance can be visually estimated with any appreciable accuracy if there is not simultaneously present within the field of view a "comparison" stimulus whose intensity or luminance is constant and can be measured. One reference (ref. 14, pg. 69) suggests that no more than 4 luminances (2 are much better) should be used to code visual stimuli by brightness, i.e., the eye can correctly identify as being different in brightness no more

(See Estimates - Page Six)

Estimates

(Continued from Page Five)

than 4 brightnesses and even then ambient illumination must be held constant. However, if a comparison source is presented next to the unknown source, the eye can achieve far greater accuracy through brightness contrast comparisons. Because a comparison source is seldom present during a UFO

analyze such data. Construction of this flashlight is simple. An aperture holder (a) and flashlight (c) are rigidly attached to a base (b). Cardboard (or other suitable material) apertures can be inserted in slot (d) as follows: *Shape Apertures*: (three circular openings of 0.1, 1, and 1.5" diameter; four elliptical apertures with 6:1, 4:1, 3:1, and 2:1 length to height ratio; two rectangular apertures of 4:1 and 2:1 ratio), (2) *Luminance Filters*: (use two sheets of polaroid plastic¹, the fixed sheet is

increases, the eye's contrast *sensitivity* also increases regardless of what level of illumination the eye is adapted to (as indicated by the number by each curve). The formula used to calculate contrast (C) is:

$$C = \frac{L_t - L_b}{L_b} \quad (3)$$

where: L_t = luminance of the extended source of interest (cd/m^2), and L_b = luminance of the immediate background (cd/m^2). Another set of visual contrast data of potential use by the UFO investigator is presented in Figure 4 (reproduced from ref. 13 by permission). These data show how contrast sensitivity varies with the size and retinal image position of the luminous source. Assuming (only for illustration purposes) that a UFO was initially detected 12° arc from the line of sight (peripheral visual acquisition is quite commonly the case) and that it subtended a visual angle (VA) of $120'$ arc (i.e., 2°), a contrast of at least 0.01 would be required to visually *detect* it. And, if the surrounding sky luminance was known to be, say $10 \text{ cd}/\text{cm}^2$, the UFO's luminance (using equation 3) would have to be at least $10.2 \text{ cd}/\text{cm}^2$. See ref. 6 for sky luminance distributions for selected sun-zenith angles at ground level, 5000 feet and 20,000 feet altitude. Therefore, if sky luminance can be determined (after the fact) at the UFO sighting location, along the same line of sight, at the same time of day (night), and under equivalent atmospheric conditions, the UFO's luminance can be approximated. Space does not permit me to review other examples of how psychophysical data such as the above may be applied to the study of UFO phenomena.

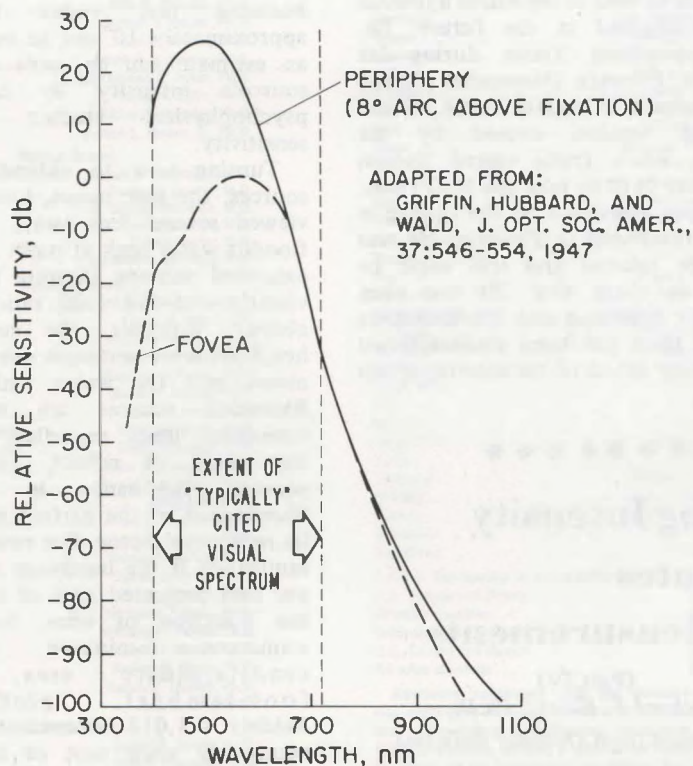


Figure 1

sighting the next best method is to ask the witness to select from among a variety of visual characteristics presented to him using a "field investigator's flashlight" (described next), the characteristics that seem to match those of the UFO.

A homemade "field investigator's flashlight" similar to the one shown in Figure 2 can be quite useful during UFO observer interviews. It can be used to more closely quantify the shape, size, and luminance features of the UFO sighted. When each aperture is numbered, data recording is greatly simplified. If all field investigators used the same apertures (described below) the resulting standardization would benefit those who

permanently mounted in slot (g) and the rotatable sheet is mounted such that it can be rotated in slot (f) to vary the luminous transmission. Be sure to mark rotation angle index marks so that given transmission values can be reproduced), and (3) *Color Filters*: (use modified 35 mm slide mounts with selected gelatin filters² of various colors). A light diffuser (h) is also needed as shown. Optical "milk" glass, tracing paper, or similar translucent material will suffice.

The "contrast sensitivity" of the human eye has been measured in many testing situations (cf. refs. 3, 11-13). Figure 3 (reproduced from ref. 13 by permission) illustrates the fact that, as the diameter of the luminous source

Another important fact about the eye's sensitivity is that during daytime conditions, the central visual field is more sensitive to luminous energy than is the peripheral visual field. At night, the fovea becomes effectively blind to luminances below about $3.4 \times 10^{-6} \text{ cd}/\text{cm}^2$. Maximum visual sensitivity occurs when the source is located between 8° and 14° arc from the line of sight and then decreases steadily into the periphery. This peripheral retinal region is over 1,000 times more sensitive than is the fovea (ref. 10). It is also known that the retina can adapt to different luminances over a 100 db range (i.e., about 1 to 10 billion! ref. 2, pg. 945). Because the retina dark-adapts about twice as slowly as it light-adapts, one should plan to remain in the ambient illumination that one wishes to visually evaluate for at least 15-20 minutes. It is because of the above cited sources of human variability that photo-electronic instruments should be used whenever possible.

(To be concluded in the
December Issue)