

OBSERVATIONAL DATA OF AN ANOMALISTIC AERIAL PHENOMENON

Modern technology provides strong evidence

William H. Spaulding

A SUMMARY is presented in this paper of the data obtained from a time-consuming series of computer enhancement analyses and experiments, which was initially carried out by GSW, Inc., and various photographic laboratories, based upon two coloured 35 mm. photographs depicting anomalous data, originally provided by the prime witness, Mr. Norman Vedaa. It is concluded that, on the basis of the photographic evidence, the images cannot be explained by any presently known natural or celestial phenomena. It is further concluded that the images represent some type of unknown craft traversing within the confines of the inner atmosphere of earth.

Introduction

A single unidentified flying object was sighted and photographed at precisely 6.20 a.m., MST, on August 28, 1969, by Norman Vedaa and his passenger† while driving N.E. on State Route 80 S, approximately 70 miles East of Denver, Colorado. Mr. Vedaa was vacationing in the Western states and was in the company of a second witness who wishes to remain anonymous.

The soft data, the eye witness reports, indicated that the lone object was yellow-gold in colour, soundless, oval-shaped in appearance, and tremendously brilliant. "The object was bright, hard to look at — and appeared to hover momentarily. The object's glow (light) was producing a reflective light on the clouds below the higher object. As the object hovered — I immediately slowed the car from its highway speed, grabbed by camera, giving it to my passenger who in turn took the first of two pictures through the windshield. The car moved a few feet as I directed it towards the shoulder of the road and,

Our contributor is the Director of Ground Saucer Watch, Inc. (GSW),* a civilian aerial phenomena research organisation which consists of "Scientists, engineers, professionals and the educated lay," numbering about 300 at present, most of whom are related directly to the aerospace industry or associated with a university. GSW has access to modern computers and scientific and engineering laboratories. Founded in 1957 this Research Group exists for those who "wish to see positive scientific action taken to eradicate the elements of 'foul-up' and 'cover-up' in UFO research."

—EDITOR

immediately, the second picture was taken. We looked away for a moment to adjust the camera and saw the object fly away at a fast speed and disappear within seconds."

The hard data from the film revealed an inarticulate bright yellowish glow with well-defined edges, and an accompanying reflective light shadow back-illuminating the clouds. Figure 1 shows the manner in which the diameter of the object decreases with a relation to the time between photograph exposures. Figure II shows the distance with reference to time

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† GSW found the prime witness articulate in his manners and technically qualified as a trained observer. At no time did any of our field investigators find the witness attempting to sensationalize or capitulate on the encounter.

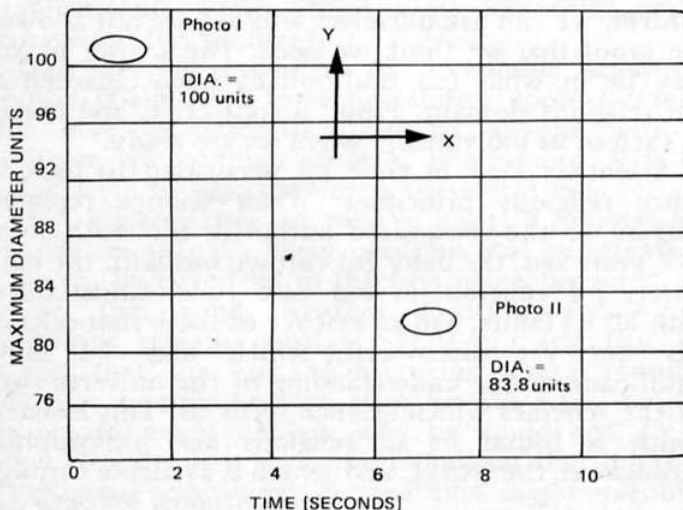
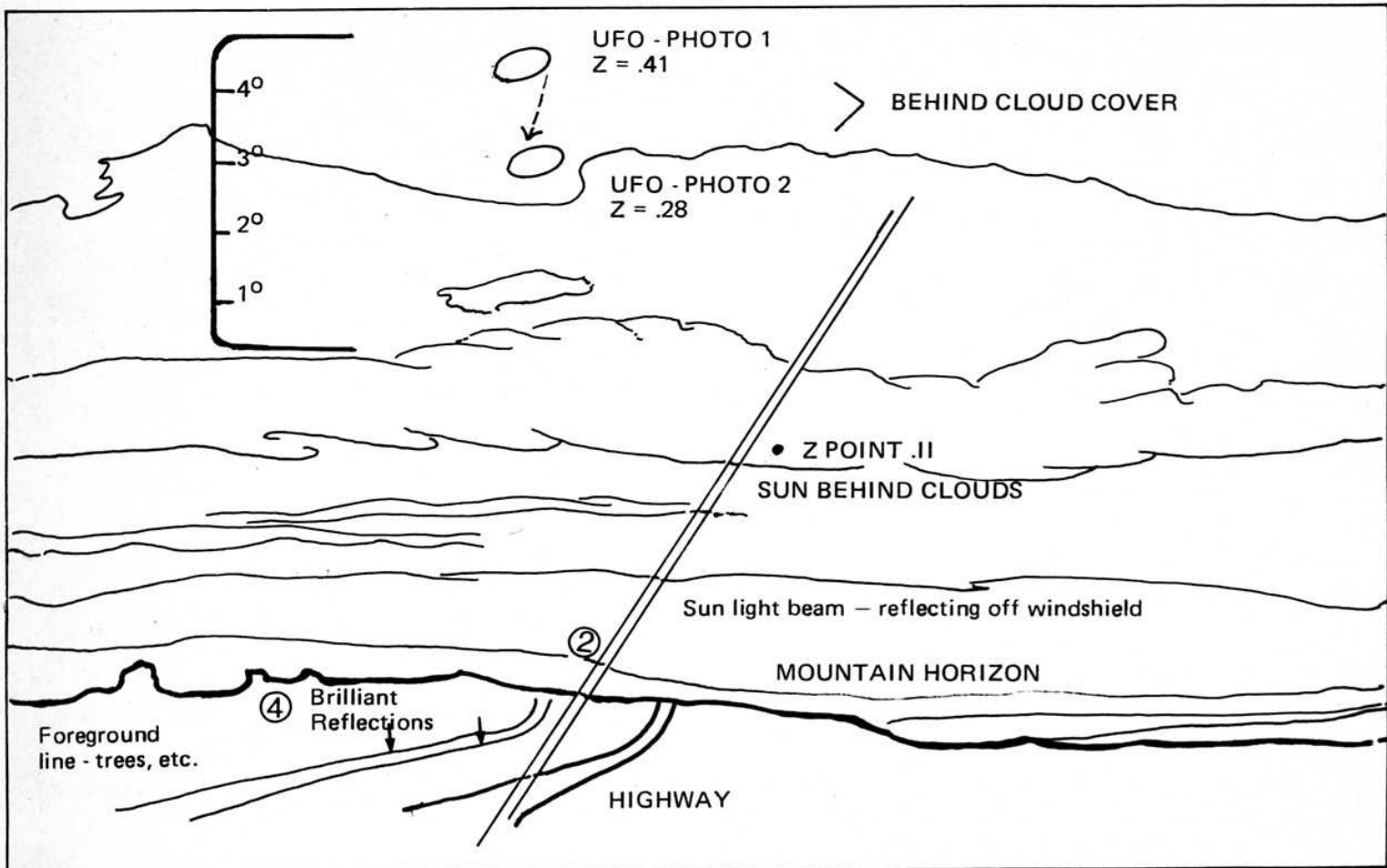


Figure I

Ration of time varying value to maximum units of diameter of UFO images

Dia. units/measurement of objects
Photo I - X.300" on std. 8 x 10 film
Y.250" avg.

Photo II X.260" on std 8 x 10 film
Y.230" avg.



TRAVEL OF UFOs [COLORADO PHOTOS]

Figure 11

1. Locations identified thus 2 and 4 are reference points for iconolog/cursor measurements
2. Density units measurements (Z)*
 UFO Photo 1 = Z .41 UFO Photo 2 = Z .28 Sun in photos 1 and 2 = Z .11
 * Units of density - Bureau of Standards, photographic step wedge.
3. Sun azimuth @ 6.20 a.m. = 75°.

Astronomical data supplied by Dr. J. Allen Hynek.

that the object travelled, prior to disappearing from the view of the prime witness. Figure II was constructed from iconological/cursor measurements (a television screen with a digitized densitometer and a planimeter to measure the units of distance in X and Y coordinates) utilizing the foreground reference points marked (2) and (4). This featured figure is drawn like a panorama on the known assumption that the photographer did *not* move appreciably. The witnesses' report and the angular measurements from the film data reveal that the photographer moved less than ten feet-linearly. This is further borne out by the consistence of his perspective. These initial measurements were made by William Spaulding and the computer technicians utilizing a Spatial Data Systems, Inc., Colour Enhancer/Digitizer(TM)

The system described and the analysis

The "Colorado Photos" consist of two colour slides of independent data (with relation to time), which describe a UFO image, and therefore the images of each light spot, and the apparent diameter of the developed image on each slide. All the linear and density measurements were taken, (see Figure

II), and compared to the witnesses' observational report and the camera data points.

Upon completion of these measurements, a three step image enhancement process was conducted, utilizing a digital computer interfaced with enhancement/viewing devices. The advantages of image enhancement and digital computers were evaluated as a useful tool and a complimentary system to the existing photographic analysis methods. The following advantages were listed:

- A. Data Processing - improved data processing techniques can permit additional testing methodology to gain information than is presently attainable.
- B. The present computer technology, software and hardware, must be compiled to the multiple signal outputs of data existing to aid in diagnosis of the UFO photographic evidence.

A closer look at the global phenomena is necessary and modern technology can help. The useful tool is the digital computer and it is presently utilized on a laboratory research basis.

Digital computers are employed in test applications for two fundamental reasons:

1. To acquire data that could not have been retrieved previously and to improve the data acquisition procedure.
2. Extraction of more information from the available data base.

To best illustrate how the ufology field applies computer methodology, this paper covers briefly the three general operations and their application where the digital computer adds a significant dimension to the field when compared to the methodology of previous years.

In the past an evaluation of a UFO photograph consisted of normal testing techniques. After all the supreme data was gathered on the sighting, with the total camera settings, the photos generally were given the following tests; electronic densitometry, image sectional enlargements and a close study of the Sun's azimuth and the apparent ground and "object" shadows. With a few variations, that was the extent of the "scientific" evaluation.

Step one – edge enhancements

To gain the impact of edge enhancement, note the original UFO photo and the normal radiographic test picture (Figures III/1 and IV) and compare it to an enhanced display of the same (Figures V and VI) which is shown as a skeletal effect of black and



Figure III/1 original UFO photograph



Figure III/2 original UFO photograph

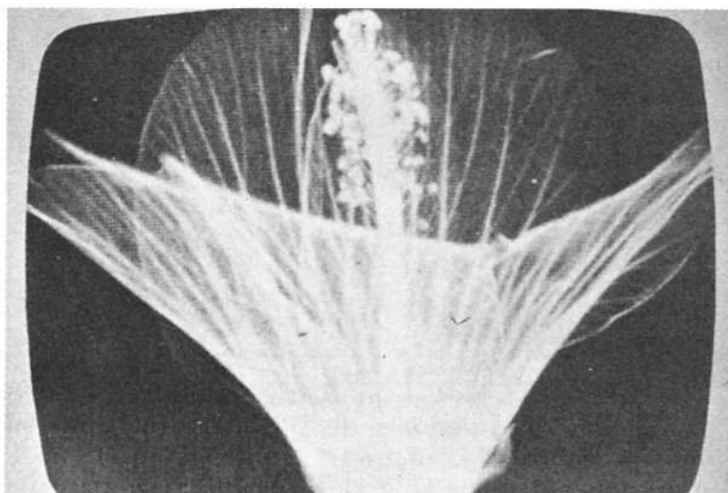


Figure IV. Radiographic test picture



Figure V. Test flower – edge enhanced

white lines representing edges and various lines of density level in the original picture.

With the enhancement the fine lines of the filaments and vein structure in the test flower are magnified and made very distinct for visual analysis (see Figure V). If the flower were, for example, a casting of an engine, the same technique would reveal hidden cracks, voids and other physical defects which are *not apparent* in a normal picture/x-ray. The same analogy is true with a UFO picture, great quantities of data are detailed on the photograph. The detail obviously assists the photo analyser by defining the image with high resolution (reference Figure VI).

Edge enhancement operates with the following manner. A black line is produced on the T.V. display system when normal image changes from white to black, or from a lighter to a darker tone of grey or density level. Conversely, a white line is produced when the normal image changes from black to white, or from a darker to a lighter tone of grey. All bright and dark areas on the picture are suppressed to a single shade of background grey.

In order to facilitate the analysis, the enhanced display can be adjusted for different degrees of enhancement, that is from a normal photo to a fully enhanced one for optimum analysis. The width

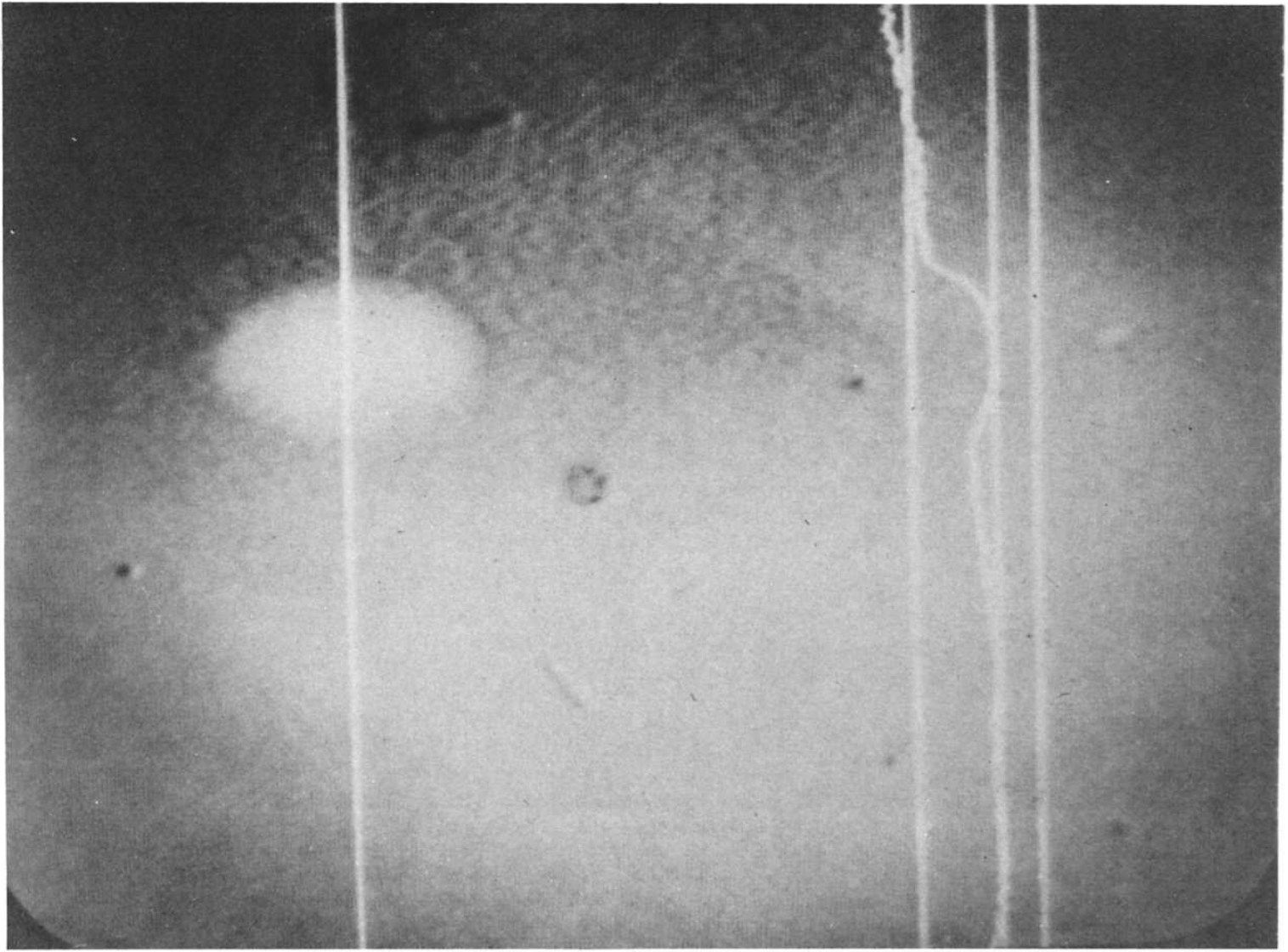


Figure VI. Original UFO photograph — edge enhanced

of the enhanced lines is adjustable from fine to very thick for maximal visibility of fine details.

Step two — colour enhancement — density contours and profiles

The grey scale of a photograph or any medium is expressed in terms of photographic density which has different meanings in different pictures. Referencing our Figure IV the grey scale values are directly related to the cross-sectional thickness of the flower. If the picture had been taken by another technique, such as a thermal infrared scanner, then the grey scale values would be related directly to a different *physical* parameter: temperature.

With the utilization of colour enhancement, the photographic density is electronically analyzed and classified into thirty plus discrete levels, plus black and white. Each level is then assigned a unique colour to make it visually distinguishable from the others. Borders between colours indicate density contours.

Our test flower photograph (Figure VII) is reproduced in vivid colour as it appears on the Colour Enhancer display in one of an infinite number of different colour analysis that can be reproduced.

In this case the full spectrum of colour is divided equally over the total density range of the image. Areas shown as white and shades of blue and green represent respectively lighter film densities than

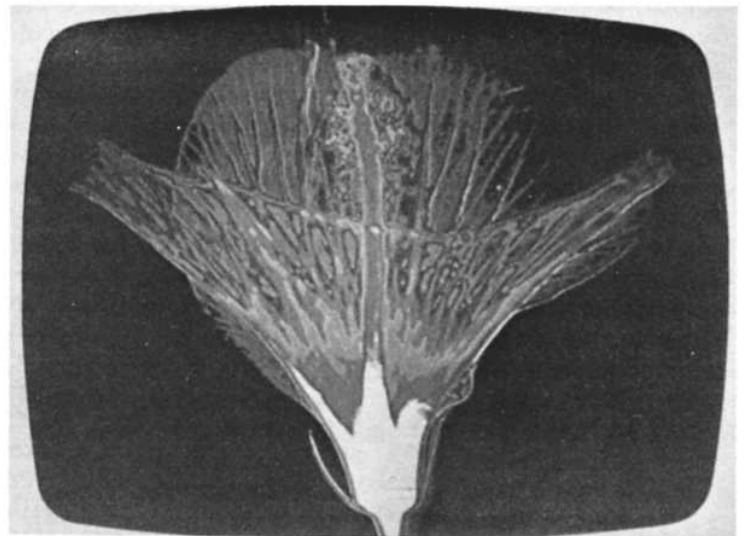


Figure VII (original in vivid green, turquoise, blue and orange-red). Test flower — colour contoured

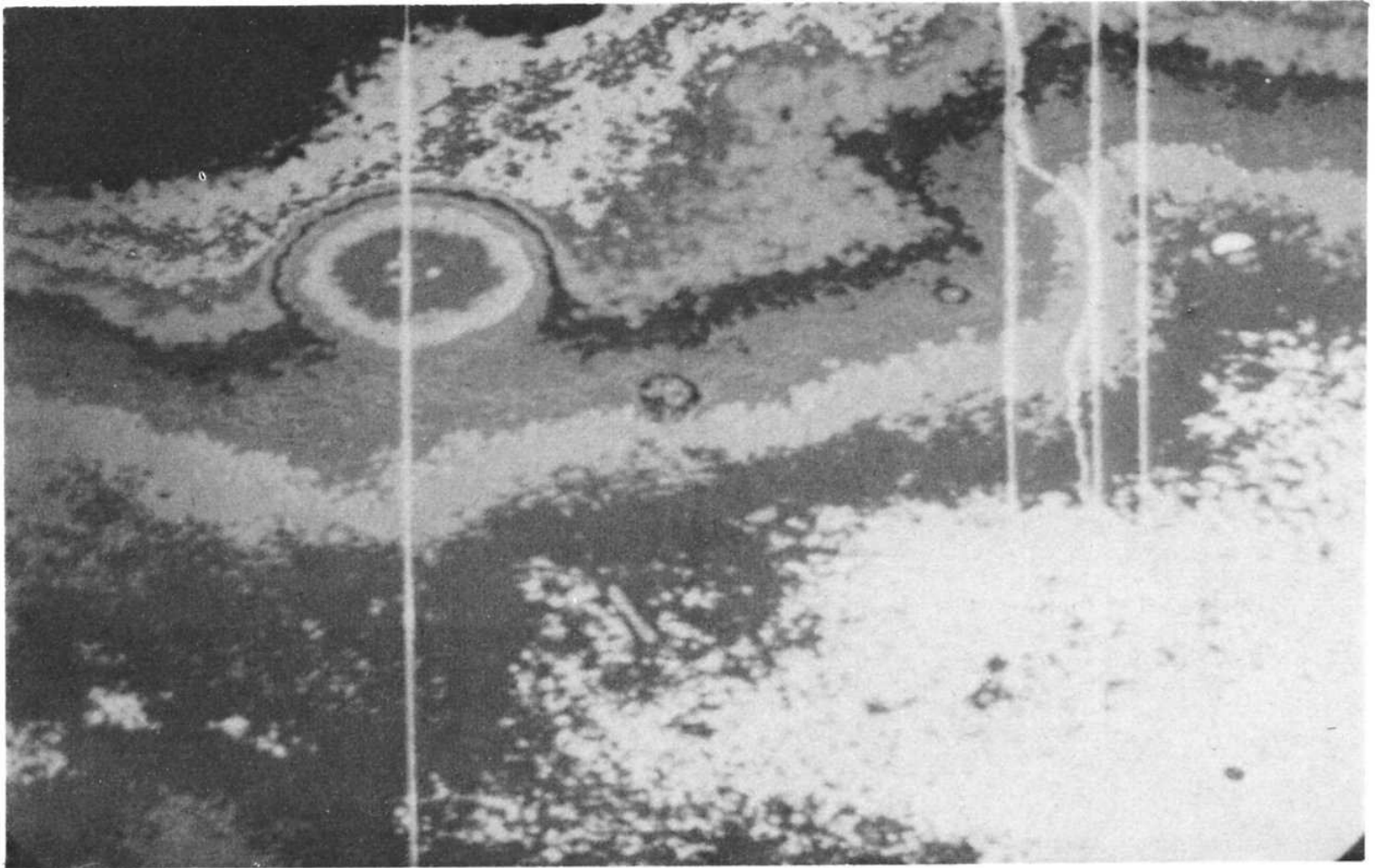


Figure VIII Original UFO photograph -- colour contoured with cursor

areas shown as yellow and shades of violet and red. The thickness of the flower is constant within all areas that are displayed as the same colour.

The technician must adjust the Colour Enhancer to achieve visual effects that are best suited for a particular analysis. Colours can be switched in and out of the picture. Additionally, the range and distance of contours are continuously variable over the total brightness range of the image. An image can thus be investigated with a relatively coarse colour resolution or any portion of the image can be investigated with much finer resolution adjusted into a smaller film density range.

Logically by contouring an image, its apparent shape can be identified. Examples are: a cloud would have a broken, uneven density; an aircraft body would naturally have a cylindrical shape with protrusions from wings, thus causing a variable density pattern; Similarly a weather balloon would not have the density of that of a metallic object. A hoax photograph generally consists of such mundane items as Frisbees(TM), camera lens caps, pie plates, etc. The density profile from such a common object would be one of low reflectivity and its obvious shape would be resolved when colour contouring and magnification techniques were added to the sensitive T.V. screen. However, a highly "suspect" UFO photograph would profile itself into a (disc) shape with an *even* density, that is, brighter in the middle than the periphery, due to its configuration. (reference Figure VIII.)

The system may also be utilized as a densitometer. Colour contours are then calibrated for quantitative measurement of film density, which is read directly in terms of the displayed colour(s). This is an advantage because the original picture, or negative, can be evaluated without enlargements of the original image which was necessitated with previous methods due to the generally small image size and the larger electronic densitometer aperture.

Step three -- Computer enhancement -- the final test

The system in use is the new Computer Eye(TM) manufactured by Spatial Data Systems. Basically the Computer Eye is a new type of peripheral input device for digital computers. The system uses a special scanner to digitize photographs or any other type photographic medium that can be sensed by a television type camera tube. The computer operates under program control, requesting information from the peripheral device regarding the brightness of any point on the image. The computer additionally provides random access to picture information, and can be programmed to digitize the entire picture or only those parts of the image that are of special interest.

The computer system operates continuously as a standard television system, providing the technician with a flickerless display of the image being digitized. A white dot, known as a cursor, is superimposed on the display showing the exact location of the

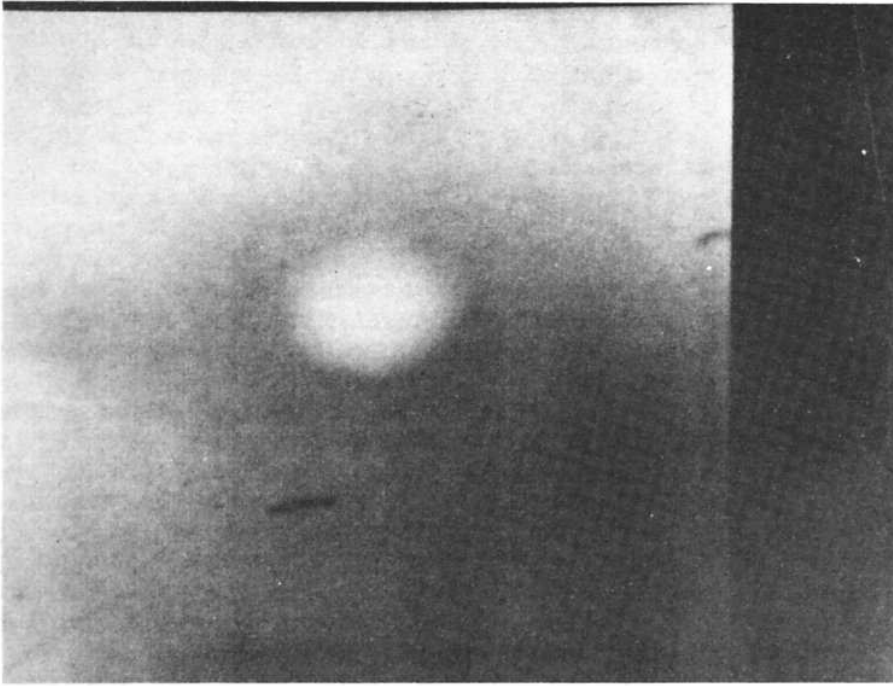


Figure IX
Computerised
UFO photograph

picture being interrogated by the computer. This cursor aids the operator for monitoring the operational sequence of the program. A graph that portrays the density of the picture can also be superimposed on the display, which allows the digitizer to be calibrated in photometric units and adjusted to cover the density range contained within the picture.

The capability of the cursor is highly beneficial when it comes to evaluating motion pictures of UFO images. For example, in a frame-by-frame examination, the cursor can be positioned repeatedly to four points at the corners of each frame. Successive frames can then be aligned to the four points and digitized in registration. Similarly the cursor is then positioned by the computer to indicate "objects" in the picture that have been categorized by pattern recognition programs.

The enhancement of the data in our UFO pictorial evidence gives us vast quantities of data from a relatively "poor" original picture. Our computer program for this type of work has the key functions of control-calibration of the film characteristics.

Our anomalistic phenomenon photograph (see Figure XI) reveals a common disc-shaped object on the finished computerized (enhanced) photograph. The computer gives us hard data about the pictures. The shape, density, reflectivity of the "surface", a size relationship and, in some cases, where more than one picture was taken, the angular motion can be accurately measured.

Finally, the picture is reprocessed in X, Y and Z coordinates. The image is reproduced into a high resolution and sensitive picture. The background or any portion of the medium can be lightened, darkened or completely removed. The image is then scanned and the digitized data can be processed into stepped generations of sensitivity. The only drawback of this potential image processing is the limited storage capacity of the computer being utilized.

Conclusions

After two and a half years of speculation and hypothesis testing, all natural phenomena, balloons, birds, atmospheric images and daylight meteors have been ruled out as a cause. Additionally, aircraft reflection and camera lens anomalies are *not* conducive to the film's resultants. The aircraft reflection was disposed of as a possibility due to lack of any observable protrusions (tail or wings); the intense brightness and obvious trajectory of flight were viewed on the enhanced output images. These same facts, with the sun angles, apparently rule out various forms of optical lens flare, cloud reflections and mirages.

I foresee within the near future highly sophisticated computer programs, with improved hardware to aid in the evaluation and analysis of *all* UFO photographs that have been rated genuine. It is hoped that this broad look at Ufology and the computer may stimulate wider application of some of these newer photographic/computer approaches.

BUFORA

British UFO Research Association

Particulars of publications, including recently published papers presented at Stoke-on-Trent 1975 conference, obtainable from **Arnold West, 16 Southway, Burgess Hill, Sussex.**

Applications for membership from:

Mrs. Anne Harcourt, 170 Faversham Road, Kennington, Ashford, Kent.

WATER SUCKING GLOBE IN HOKKAIDO

Jun-Ichi Takanashi

Our Contributor is Chairman of the Japanese "Modern Space Flight Association".* A preliminary report of this interesting case appeared in *World Round Up* in *FSR* Vol. 21 Nos. 3/4

HOKKAIDO is the northermost district of Japan, where UFO sightings occur more frequently and in more drastic and interesting fashion than in the other districts. During July, 1974, we received a very intriguing UFO report from a university student by way of a letter. He was not resident in Hokkaido, but a Second Grade student of a university in the Kanto district. When he had been working during his previous summer vacation as a Night security guard at a lumber yard in Hokkaido he had, he claimed, undergone a startling and eerie experience.

The exact location of the occurrence was at Tomakomai, a small industrial town on the southern coast of Hokkaido. As the student prefers to remain anonymous, we will call him Mr. Masaaki Kudou; he was 20 years old at the time of the incident. His story is as follows:—

"It was during July, 1973, but I do not remember exactly what day it was. As the school had broken up for the summer, I had returned to my home town, Hokkaido, where I had taken a job as night security man at the lumber yard there.

"Although a car was used in the job, the lumber yard at night is a very desolate and lonely place, with only a few dark warehouses and chimneys in the distance. As the night watch is done alone, it was not a pleasant feeling being left there is solitude. After making the round of the lumber yard, I returned in my car to the prescribed place, switched on the radio and lit a cigarette. I was looking up at the clear night sky, absent-mindedly, through the driver's window, relaxing in the seat, when suddenly a streak of light shot across the sky.

"As the light went out immediately, I first thought it might be a shooting star. But then the light reappeared at the very spot where it had gone out, like a miniature bulb being switched on, and then it began to expand and contract alternately with extreme rapidity, finally becoming the size of a baseball. At least, it appeared so to my naked eye, but it might have been much larger, as I suppose it was in the far distance.

"I felt as if my heart would explode, and then felt my hair stand on end, but after an instant of extreme surprise, although aware that I was in the grip of tremendous fear, I was making frantic efforts to follow the movements of the UFO. The light moved to and fro in all directions, within the limit of one metre, visually. I decided then and there to continue to watch the manoeuvres of the object, suppressing what was now my great excitement.

"Suddenly it began to descend with a spiral motion, and having come down to the altitude just

above the dome of a cement factory, which was visible in the far distance, it began to send out what appeared to be intermittent green light rays in one direction, which I supposed to be north.

"As the scene was too much like science fiction, I wished what I had been observing might prove to be a dream or my imagination, but in spite of such wishing, the UFO just would not stop its action.

"When at last it stopped its strange 'signalling', it began to descend over the waters of the bay, describing a big arc with startling speed. Fortunately the bay could be seen from where my car was located, and I could see all that happened there. I also realised at that time that the light was rather nearer to me than I had at first thought.

"The light descended to an altitude of about 20 metres from the surface of the sea and stopped, and then (I am positive you will not believe my words from now on!) from the underside of the light what appeared to be a glass-like, transparent tube, came down, and when the front edge of the tube touched the surface that part of the tube began to glow and appeared to be sucking up the water!

"Accompanying the elongation of the tube, I heard a faint sound, just like the sound of a cicada, especially of the kind which emits the noise which sounds like, 'Min-Min-Min-Min...' but the sound was not so monotonous, and appeared to be lowering its pitch. I was stupified, and suddenly felt like an idiot! After dropping my head downward for some minutes, having been struck to such a degree by the scene, I looked up again and saw that the light had already finished its sucking action and was maintaining its position in the same place. And then it began to fly again, and then to approach me — and when I realised that it was heading to the point just about 50 metres above my head, I was frightened and felt more dead than alive! The simple feeling I had at that moment was that I would be attacked and killed by the object, the size of which appeared now to be about that of a volley ball.

"The intensity of the light had now diminished compared with what it had been in the distance (or it might have seemed so, as the surroundings were lit up by its light as in daytime and the details of the object could be made out; it was now emitting a whitish rather than an orange colour. *(He said later that its surface was as smooth as a ping-pong ball, and appeared to be white, and although not so bright it was glowing by itself — J.I.T.)*

"Then I saw with my own eyes a row of what looked like small windows around the centre of the object, which was round, and in one of the central ones I saw an eerie, shadow-like figure, and just two windows to the right of it two more figures, too

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