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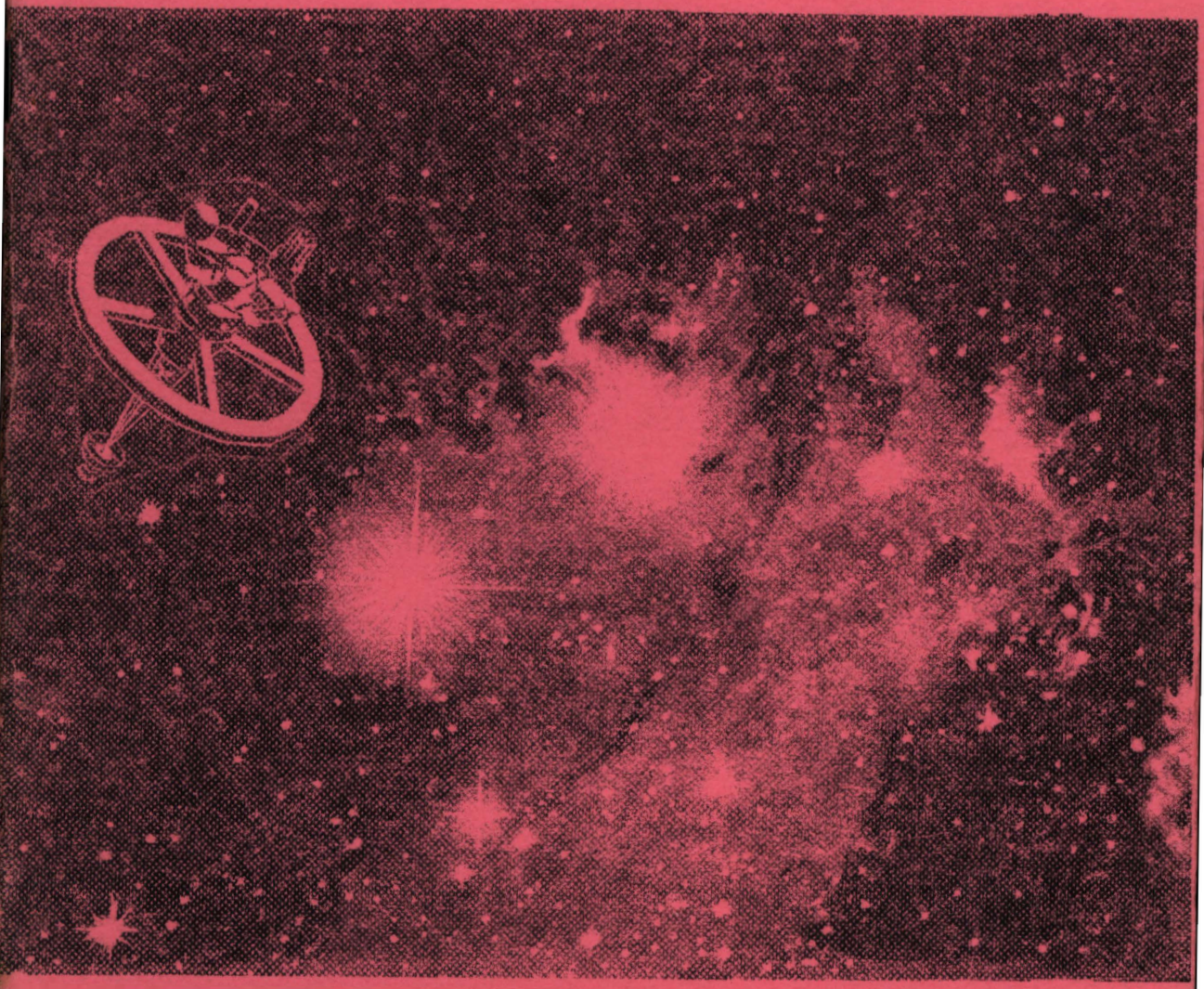

JOURNAL OF THE ISLE OF WIGHT UNIDENTIFIED FLYING OBJECT INVESTIGATION SOCIETY

1965, quarterly

No.1

S P A C E L I N K

THE JOURNAL OF THE ISLE OF WIGHT UNIDENTIFIED FLYING OBJECT INVESTIGATION SOCIETY

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IWUFOIS is a non-sectarian, non-political, non-profit making society dedicated to the unbiassed investigation of all UFO phenomena. The views expressed in its journal, SPACELINK, are not necessarily those of the Society or the Editor.

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GUEST EDITORIAL BY LEONARD G. CRAMP, CHAIRMAN OF I.W.U.F.O.I.S. & AUTHOR OF "SPACE, GRAVITY & THE FLYING SAUCER".

"These also must I bring"

It is perhaps true to say that over no other subject of recent times, has there been so much speculation, so much philosophizing and so much confusion as there has been over the aerial phenomena known as flying saucers. It is common knowledge that among other things, they have been accredited as being hallucinations, misinterpreted natural phenomena, weather balloons, secret terrestrial aircraft, interplanetary space craft, interstellar space craft, interplane craft, time machines etc., etc. It is claimed they are robots or piloted by intelligent monsters, anthropoid crewmen, giants, pigmys and normal human beings. This host of profuse and often conflicting information has been assimilated and digested by the interested public over the years, until now it is simply a matter of you name it, we have it, take your pick.

Briefly, as most UFO researchers are aware, the position on this planet today is this. (1) It is being visited by unknown intelligences of an extra terrestrial source, there can be little doubt about this. (2) Apart from speculation and the many varied claims of contactees, we still do not know where our visitors are coming from. (3) This has created a condition among the peoples of the Earth where a relatively small proportion of them accept the existence of the visitors and the majority do not. This proportion is gradually changing, as the minority increases.

In offering this editorial, I am once more acutely and sympathetically aware of the many diverse interpretations and the many others which are still yet to come. I am aware of the sceptics dilemma, the believers embarrassment when discussing 'evidence' which in the light of modern knowledge he can hardly believe true. I sympathise with the reader, who starting from square one, rejects everything except the fact that saucers exist, then once more starts out all over again. The square one of course must be the 'reliable' reports such as the recent U. S. Air Force radar sighting mentioned elsewhere in this journal. Such reports are fairly easy to fit in, for they do not refer to giants, pigmys, monkeys or monsters etc. The Universe is teeming with life in many varied forms. There are many varied functions and phenomena to space travel technicians, which complicate and help to stimulate speculation still more. For such motive of spreading awareness, it is even desirable to have sceptics, for they in turn promote healthy (and let us hope painless) debate.

We might then be nearer to the truth if we accept the inevitability of disagreement and discussion as part of a natural state of growth and spiritual development, the apparent reluctance of a government to speak on UFO findings may in fact be the wish of a higher order, which doesn't mean that you should accept this and your sceptical neighbour's arguments. It simply means that this opposition is a form of natural resistance, without which there would be no order of things.

It may be argued that such observations are purely philosophical and this will not be denied. For our subject is a phenomena which we as yet cannot analyse, until we do, our approach must of necessity be philosophical. We can only speculate on the intentions of our brothers from outer space, "these other sheep".

L.G.C.

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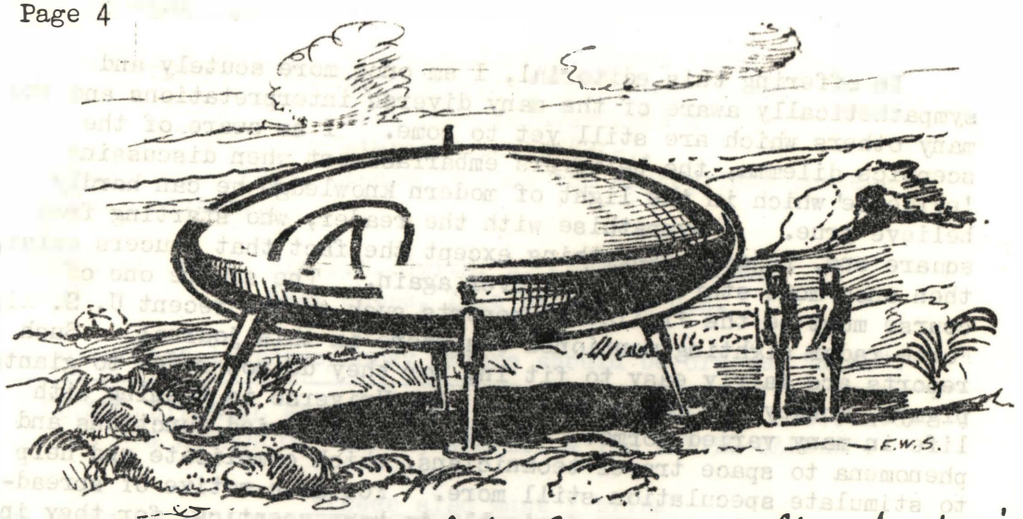

Artist impression of the Socorro craft on April 24.'64 seen by patrolman Lonnie Zamora.

AUTHENTIC NEW MEXICO LANDING

By far the best sighting of last year, and which proved to be the first of a very large "flap", occurred in Socorro, New Mexico, on Friday April 24, 1964. City officer Lonnie Zamora said he was chasing a car on U.S.85 when he heard what he thought was an explosion. He said he drove to within 150 yards of a draw about one mile South West of town when he saw what appeared to be an overturned car in the draw.

"I saw two figures in what appeared to be white overalls like mechanics wear." Zamora said, "I lost sight of them behind a hill and drove closer and parked again." He said his first impression was that he had seen an "overturned car and two youths."

Zamora said he then proceeded to walk within 200 feet of the object when he again heard a roar. He said he saw a brilliant white metal object, about the size of a car, rise and hover about 20 feet off the ground. It then flew off to the west, rising gradually.

Zamora said he was scared and that this experience taught him one thing, if it happened again he would still run away, but this time he would not tell a soul about what he saw.

Army Capt. Richard T. Yolder, uprange commander of White Sands' Stallion Range, said Zamora is a "very reliable witness". Deputy Sheriff James Lukie, who was called to the scene of the landing, said "its something out of the ordinary, something very few have ever seen."

Zamora said the machine had been supported on the ground by four spider-like legs. The brush was supposedly burnt by exhaust from the saucer. The craft appeared to be made of a shiny, aluminium-like substance and flew away when he got within 100 yards.

State Police Capt. Sam Chavez said he was told by Zamora that the UFO he saw had red markings on its side. Chavey said Zamora told him the design was an inverted V with three bars crossing it, but that the Air Force had told him not to discuss the markings.

The following evening two unidentified motorists said an object similar to the one described by Zamora swooped down out of the sky toward their car in the Espanola, New Mexico, area. Similar craft were observed on Saturday by a Socorro teenager, an Alburquerque motorist and by George Mitropolis of Alburquerque, south of Truth or Consequences near Caballo Reservoir.

On Sunday, Orlando Galegos of Santa Fe told State Police he got within 200 feet of a huge metal object which looked like an egg-shaped tank. He said flames spurted silently from numerous jets around the bottom of the object. It was as large as a telephone pole and about 14 feet in circumference. State Police Capt. Martin Vigil investigated the La Madera sighting and discovered that the ground was still smouldering 20 hours after the sighting. He said rocks in the center of the area were split, a bottle was melted and green brush had been set on fire, evidently by intense heat of some sort. An Espanola newspaper correspondent said whatever the object was it was not a conventional type object employing thrust. He said the ashes were in place, not scattered. Also found were "paw prints", like a mountain lion's, as well as landing gear marks which were in the form of four impressions in the dirt.

Dr. J. Allen Hynek, special UFO consultant for the Air Force, arrived in Socorro on Tuesday night to begin his investigation. Dr. Hynek said he hoped to talk to Zamora and then visit the site where the officer says he saw the object land.

Shortly before Dr. Hynek's arrival State Policeman Tommy Richardson arrived at police headquarters to report that he had

had a call from a Don Adams of Edgewood, near Moriarty, who told of seeing an object about 100 feet off the ground. He said it appeared to be a fluorescent or green coloured glowing object.

Adams told the officer he drove his car under the object and his car stalled. The youth reported he then got out and fired six shots at the object, reloaded and fired again.

On April 30 at Canyon Ferry Village, Montana, a group of youngsters saw a four-legged flying object land. One of the youngsters had called the sheriff's office the night before and reported a bright egg-shaped object hovering outside her window. Newsmen and sheriff's deputies investigated the area just east of Helena where the object was sighted. They found four holes about 13 feet apart, 6 to 8 inches deep and 8 to 10 inches across. The holes smelled like diesel fuel according to one newsman. A circular spot was seared into the top of underbrush. First report of the object came from Linda Davis, 11, who said "it was a bright glow in my bedroom window", and was also observed by her brother at approximately 10:30 pm. The holes were discovered about 125 feet from the rear of the Davis home and about the same distance from the lake shore.

At Baker, California, three Californians travelling by car to Las Vagas reported seeing a mysterious dome-shaped object the size of an airship which disappeared while their attention was momentarily diverted.

Credit :- American Interplanetary News Service

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' FLYING SAUCERS' PAY A VISIT '

"Unidentified Object Hovers over Helsby Hill."

Unidentified Flying Objects were sighted hovering above Helsby late Saturday evening, and again on Sunday night (24th/25th Oct. 1964).

Says Robert Britland of 10 Queens Drive, Helsby, a British Railways Worker, "About 10 o'clock on Saturday night, I saw a revolving light hovering over towards Frodsham Marshes. It was stationary for about three minutes, and I could make out a big saucer shape with a dome on the top. It then made off in a South-Westerly direction."

"It was, I would say, about 600 ft. up, fairly low, not much higher than the top of Helsby Hill and the ou tine was quite clear."

Mr. Britland continued, "On Sunday evening, about a quarter to eleven, a wide beam of light appeared over the top of the hill, stretching out to the horizon in the direction of Liverpool. It got thinner and thinner towards the distance and ended in a needle point, a long way away.

"About five minutes later" he continued, "a red revolving light, like the one of Saturday night, passed overhead and the beam disappeared."

It was, according to Robert as though the object was feeding off the beam, utilising some of the power in the air. There wasn't a sound as it glided slowly overhead. The top of Helsby Hill is about 410 feet and this time the 'machine' was estimated to be flying at 1000ft.

When he saw the 'saucer' in the sky on Saturday night, it was he says, "quite by accident", and he was alone at the time, and the situation was similar to when he saw two such craft in the summer, one of them in broad daylight, when the sun caught it at an angle.

On Sunday night however he was in the garden of his house when the "thing" appeared, and he was able to rush round to his next door neighbours and get them out to verify what he saw.

Said Michael Antrobus, next door, "It was just a red revolving light, there was a beam across the sky. It wasn't a plane."

Mrs. Antrobus commented "no, it wasn't a plane, and it wasn't a helicopter. It didn't go as fast as a plane would go and it hovered around for a long while".

"But when it did go, it went too fast for a balloon of any sort", said Robert.

Mr. Antrobus and Susan also saw the object.

A spokesman at Speke Airport said that they hadn't had any reports of U.F.O's in the area.

(This report appeared in a recent "UFOLOG" Information Sheet published by the I.W.U.F.O.I.S.)

RADAR AND THE UFO (NO: 2)

by R.S.Squires

The first article in this series ended with an extremely brief and elementary outline of radar principles. We now continue with an elaboration of these principles, unfortunately but necessarily, brief and again somewhat simplified.

Many factors contribute to the overall performance of a radar system, and what any particular system can 'do' will depend upon the inter-relationship of these factors. In practice, it is the designers task to manipulate those factors which are variable, in order to obtain the desired system capability. These factors - or things which determine the 'abilities' of a radar system - are generally expressed as a mathematical equation. As the RANGE of a radar system is often a primary consideration for the designer, the equation is usually written so as to show the radar range in terms of the other factors. The equation is therefore known as the radar range equation, and is usually written thus :-

$$R\,(\text{Max}) \quad \sqrt[4]{\frac{Wt.K.At.Ae.Ar}{Sr.16\pi^2\lambda^2}}$$

Where: Wt = Transmitter Power. G = Power gain of transmitting
Sr = Minimum imput Power to Receiver. aerial.
At = Effective area of transmitting aerial)which may be
Ar = Effective area of receiving aerial)the same
Ae = Effective reflecting area of target.
λ = Wavelength.
K = $G\lambda^2/At$ (a constant for the particular type of transmitting aerial used). R = Range

The equation does not take into account the effects of atmospheric absorption, reflection from the earth or sea or a number of 'side effects' which arise in practice. The range of the radar, in terms of the factors quoted, is the maximum which can be obtained. From this we can see amongst other things, that:-

A) The radar range is proportional to the fourth root of the transmitter output power.

B) If the power (wt) is doubled, the range is increased by only 20% (approximately).

C) It is necessary to increase the transmitter power 16 times

to double the range of the radar, and,

D) If the wavelength is decreased, the range will be increased. This is due to narrowing of the beam with consequent increase of G - the power gain of the transmitting aerial.

The term Ae, the effective reflecting area of the target, is defined as 'the area of a hypothetical target, which re-radiates all the energy incident on it in all directions equally, and produces at the radar receiver a signal equal to that produced by the actual target'. The value of Ae for an actual target depends upon a great many things, and it is only possible to derive an empirical figure. This is usually expressed in square metres, typical examples for aircraft are:-

Meteor - 8 square metres.
Canbera - 14 square metres.
Boeing 707 - 102 square metres.

Ground Effects:

As already mentioned, the equation given for radar range did not take into consideration certain factors which arise in practice. However, one of these, namely ground reflections, cannot always be ignored and we will now briefly consider the effect this has upon the equation.

When the radar transmitter 'fires' - sends out the pulse of radio energy - targets at low angular elevations (ships, or low flying aircraft) receive the pulse - or 'rays' - by two different paths. One being direct from the aerial, the other reflected from the earth or sea. The reflected ray interferes with the direct ray, and the range equation now becomes :-

$$R\,(MAX) \quad \sqrt[8]{\frac{Wt.K.Ae.16\pi^2h^4H^4}{Sr.\lambda^6}}$$

h and H are, respectively, the heights above the earth or sea of the radar and the target. The formula only applies if R is much greater that $\sqrt{hH}$ and is based upon the assumption that perfect reflection with a 'phase' change of 180° will occur. In practice, this assumption is almost correct for low angular elevations.

Although not strictly relevant to the objectives of this article, the foregoing is given in order to explain the difficulty in detecting low flying aircraft at long ranges. As the equation shows, the range is now proportional to the eighth root of transmitter power.

With modern radar techniques, particularly those utilising

very narrow radar beams, the effect of ground reflections can be virtually eliminated and the free-space equation becomes more-or-less applicable. However, as actual techniques are outside the scope of the present discussion, this aspect will not be persued, although it will be necessary to consider certain implications later on.

Frequency:

The 'pulse' of energy transmitted by a radar consists of a short-duration 'burst' of oscillatory electrical energy - usually produced by a special valve such as a 'Magnetron', or a 'Power-Klystron'. The oscillatory frequency of this energy is a very important aspect of radar technique, and may range from a few hundred to several thousand megacycles. The two frequencies most commonly employed are about 10,000 Mc/s - known as 'X'-band, and 3,000 Mc/s known as 'S'-band. The latter frequency is more suitable for high-power, long range systems, and the former is usually chosen for Marine or aircraft radars.

The range equation shows that radar range increases as the frequency is decreased, due to the narrowing of the beam for a given aerial size. A narrow beam is essential for accurate target location - but a wide beam is very desirable for searching out the target in the first place! In practice, a compromise results and a complex system will sometimes be provided with both 'X' and 'S' band facilities in order to fulfil these two conflicting requirements. A typical example is a ground-to-air missile control radar, the S-band equipment searching out the target, the X-band then locking on and passing accurate positional data to the missile control system.

Pulse Length and p.r.f.

The length of time during which the transmitter fires, i.e. the length of the 'pulse' of radar-energy, is usually very small in comparison with the time between successive pulses. An X-band radar may generate pulses lasting only 0.2 micro-second (i.e. only two-tenths of one-millionth of a second) and an S-band only five-millionths of a second. The pulse must be kept short in order to prevent apparent merging of targets which are close together.

The number of pulses, i.e. the number of times that the transmitter 'fires' in one second is called the 'pulse repitition frequency' and may range from a hundred or so times for S-band radars, to several thousand for the X-band equipments. The time between

successive pulses must be of sufficient duration to allow echos returning from a great distance - the extreme range of the radar - to arrive before the next pulse is transmitted. Hence the longer the required range, the lower the number of pulses which can be transmitted in a given second. Unfortunately, the 'size' of the echo signal arriving back at the transmitter depends upon the 'average' power reaching the target, not the 'peak' power. Therefore, as the average - or mean - power is equal to the sum of the powers represented by all the pulses occuring in one second - and, as it were 'stretched out' over the whole second - it is desirable to generate as many pulses as possible in each second. This, as we have seen may not leave a large enough space between each pulse for the echo to return without becoming confused with echos from a previous pulse. So we have, once again, to compromise. The p.r.f. for X-band radars - which are not usually required to have a very long range - is of the order 1,000-2,000 pulses per second. The S-band, long range radars normally work at 200-700 pulses per second. And, as a matter of interest, the latter's peak power may range from 1 million to 2½ million watts, corresponding to a 'mean' power of 500 watts to 2,500 Kilo-watts.

Measurement:

The measurement of distance by radar relies upon the accurate measurement of the elapsed time between the emission of a pulse from the transmitter, and the arrival of the corresponding echo. As the pulse has completed a return journey, this time has therefore to be divided by two, to obtain the true range of the target. The velocity of propagation of a radar pulse, is equal to that of light - 186,000 miles per second. In one micro-second (one millionth of a second) the pulse will travel a distance of (approximately) 327 yards. As this is a 'return journey' the actual distance of the target will be half this - 164 yards.

The method of measurement relies, obviously, on electronic means. In the simplest case an electron beam is made to move across the face of a cathode-ray tube at a linear, predetermined rate. The 'start' of the beam is made to coincide with the despatch of the pulse. Returning echos cause, for example, an increase in the brightness of the beam at a point corresponding to the time taken by the pulse to complete it's return journey. By suitably 'calibrating' this 'time-base' with marker 'pips' generated by an accurate oscillator, a good measurement of target range may be made.

If the electron beam (time-base) is made to originate at the centre of a cathode-ray tube, and this time-base is then made to rotate in synchronism with a rotating aerial (producing a narrow beam of 'radar waves') it is easy to see that a true time-relationship between the various returning echos may be presented on the face of the tube. This is the basis of the 'p.p.i.' mentioned earlier.

By suitably calibrating the periphery of the c.r.t. in degrees, it is, with a sufficiently narrow beam, a simple matter to assess the bearing of any target from the radar site. The only problem remaining is to discover the 'height' of the target. To do this it is usually necessary to use a second radar system specially designed for the purpose - although the principles of operation are no different.

In this necessarily brief outline of radar principles, it has not been possible to discuss any but the most elementary techniques. Not all radar systems are the 'pulsed' variety. Many, including the police 'speed trap radar' rely upon the 'Doppler' effect, and several very specialised radar systems have been developed for missile control and related requirements.

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Future articles in this series will endeavour to briefly outline those special techniques which are relevant to 'radar ufology' and, for those readers wishing to persue the subject, a comprehensive bibliography will be provided.

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LATE NEWS: WASHINGTON, TUESDAY 5th JAN. 1965.

U.S. Air Force said it was investigating the reported sighting on radar of two unidentified flying objects travelling at 4.800 m.p.h. towards Patuxent Naval Air Station, Maryland, on December 29th. The objects executed a tight turn and disappeared -

D. M. Reporter.

(Please compare this sighting with the radar sighting described in Spacelink No.5 (p.7) I.W.U.F.O.I.S. are contacting the Commanding Officer of Patuxent for details and will publish anything received.

Ed.

THE TITICACA CALENDER AND OTHER MYSTERIES

An article was published in the Belgian magazine 'Auto Touring' of which the first part speaks of the 'Gates of the Sun'. Then under the title 'Tourists of Another World' find the following :

"In addition to the strange Titicaca Calendar of Venusian days, we find other phenomena which are up to now unexplained and on which we have to conduct our own enquiry with all the modern scientific guarantees.

"At the Bagdad Museum for instance, you can find an electric accumulator which was discovered over six feet underground in 1960 while digging for a foundation of a building. This electric engine was 4,500 years old and still works. Yet no scholar will admit that Oriental civilisations of 4,500 years ago could conceive and construct this means of producing energy.

"The Russian archaeologist, Alexander Kazantsev is going to Salzburg with the intention of analysing parallel pipes of polished steel embedded in the deepest veins of an Austrian coal mine and dating 30,000 years before our era. While in Austria, he plans also to examine curious steel nails found imbedded in a lime-stone bed 80 million years old.

"At the Athens Museum (Greece) is another machine that held the attention of the Soviet Scientist. It is a device removed from the bottom of the sea by Greek fishermen and intrigues the astronomers by its perfection. It shows the months, hours, risings and settings of the sun and brilliant stars during the year.

"A second dial on the clock like mechanism shows the phases of the Moon, while another needle follows the movements of Mercury, Mars, Venus, and Jupiter. This device is wound by a small key but the date of manufacture is set at 3,500 years B.C.

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A SUGGESTED METHOD OF APPROACHING

A U.F.O. SITE OR INCIDENT

T. Pattinson of I.W.U.F.O.I.S.

The ambition of any U.F.O. Group must surely be the examination of a site where a known U.F.O. event has taken place, and preferably to be the first investigation on the site.

The approach to this rare prize should be carried out in a logical fashion in order to obtain all information on the first visit, as a second visit may find the site overrun with sight seers and others. Such activity will obviously obliterate much of the site's characteristics.

In order to obtain the required information quickly and in logical fashion, the group should carry a 'prospectors' kit. Clothing need not be dealt with as this is a matter of common sense, but gum boots appear to be a must. Hot drinks in thermos flasks will help the 'inner man' should the weather be cold and the investigation likely to be a lengthy one.

The best method of carrying equipment would be the use of a medium size attache case, suitably divided into compartments. Inside the lid a large school type slate, complete with slate pencil, (captive on a string), could be mounted in such a way that it is easily removed for use. One side of the slate could be used for a site sketch, the other side being used for notes. The slate is considered to be a more practical proposition than paper and pencil in wet or windy locations.

A 60 foot measuring tape (preferably a rustless type), is a must for measurements, also a calibrated length of rope for depth measurements. A few tins having press on lids (such as coffee tins) will be useful for storing hard specimens, whilst a selection of plastic bags is also worth having for other objects. For the examination of small detail a large magnifying glass should be included. Also, a few dozen straight sticks each about 18 inches long and painted bright orange or red for easy identification will be required for marking any objects or features. Finally, a small magnetic compass would be useful as a means of checking for 'extra' magnetism'.

Specialist equipment should include a simple Geiger counter, preferably with a thin wall tube for detecting radio-activity and gamma rays.

A small audio amplifier and microphone with a long lead, (as proposed by J. Feakins) would be useful for probing small and/or deep holes. An additional item for use with the amplifier would be a metal detector, also with a long lead.

Photographic gear is usually available from individual members, flash equipment should be available for use if required. Possibly a small amount of ordinary flour would be worth having handy for high-lighting any ground features which are not well defined, and are to be photographed.

The final approach to the site should preferably be made with a maximum of six people, each of whom could carry several of the coloured previously mentioned. A check for radio-activity using the Geiger-counter should be made continuously during the approach to the site. At a distance of 25 yards, or a distance determined by the site features, the group should form into a circle spaced equidistant from each other. Anything worthy of note should be identified by driving in one of the coloured sticks, care being taken not to disturb the object, or feature, which should not be disturbed at this stage.

Perhaps the motto for this type of investigation would be, "Observe much, tread little", as this first approach could be vital, and a careless or reckless outlook could destroy or obliterate much useful information. Furthermore, a discreet approach may be wise in view of Cleary-Bakers advised caution in dealing with these, as yet, unknown forces.

All information collected should ideally be noted down before leaving the location. The coloured sticks will, of course, be removed in turn as the relevant facts are noted.

The foregoing is suggested as a means of approach should such an opportunity arise. Perhaps a few practice runs on hypothetical sites would be of great value in establishing proper co-ordinated procedures.

The odds against a local U.F.O. visit may be very great, but we are possibly on a par with the archaeologist and his painstaking sifting of dust in the search for detail. Furthermore, it is remotely possible that we might be required to submit our findings and files at any time to a Government body. Our findings should therefore be presented in a scientific and logical fashion if we are to command the respect and notice of such bodies when the time comes.

'SPACELINK' invites any reader or U.F.O. group who have had experience of investigating an incident to write it up for publishing.

(ED.)

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THE
"U.F.O'S" OF 1850's !

A recent Flying Saucer Review published a letter containing an account of a sighting which was printed in the 'Illustrated London News' of May 1854!! To quote :- 'Meteor - A correspondent at Lee-park, Blackheath states that about half past ten, p.m., on Sunday evening, the rain having ceased for a short time a peculiar phenomenon was observed. It had first the form of a comet, and continued so for about two minutes, when the tail gradually diminished, forming into a bright circular light of a blueish colour; and suddenly another ball of the same hue appeared just below where the tail was disappearing. This beautiful sight lasted for about a minute more, when the clouds again gathered and obscured it. Its brightness, however, was such that it was clearly distinguished behind the clouds, setting rapidly in a north-west direction. Its position, when first observed, was nearly due north, slightly westward, and about four degrees above the horizon'.

(Spacelink also quotes from another issue of 'Illustrated London News' this time for that of August 21st. 1852, 2 years before the above extract. In the following, note the remarkable corroboration of the two witnesses).

'EXTRAORDINARY METEOR'

(To the Editor of the Illustrated London News)
Stoke, Sub-Hamdon, near Yeovil. August 13th, 1952.

'A meteor of an extraordinary appearance was seen here last night (August 12th) at about 9-20 Greenwich time, to which my attention was directed by a very bright flash, as of lightning and immediately turning my eyes to the north, the body of the meteor (if any) had disappeared, having left a brilliant mass of light about 15 degrees in length of which I send you a diagram. This continued visible for nearly ten minutes gradually fading. But (what I consider most remarkable) it resolved into two or more distinct bodies nearly of the apparent magnitude of the planet Saturn, which remained so long visible that I almost doubted if there were not stars in that precise spot which I had not noticed. They, however, became less and less visible and had disappeared in about ten minutes after.

I hope to find that this meteor has been noticed by other observers in distant parts of the world, and its place correctly marked, which may lead to a calculation of its distance, &C.

R.W.

(To the Editor of the Illustrated London News)
Holyhead, Anglesey, August 13th, 1852.

'I beg to call your attention to an extraordinary meteoric appearance in the heavens, which occurred in this neighbourhood, on the evening of the 12th inst. At 9-20 p.m. (Greenwich time), my attention was suddenly attracted by what appeared to me to be a peculiarly vivid flash of lightning, and on turning towards the S.S.W., the direction whence it came, I saw a magnificent body of meteoric light, of the form shown in the drawing, the colour being a most beautiful and intense blue.

It occupied at least a fourth part of the visible heavens, inclining towards the earth at an angle of 45°, and lasted for thirty or fourty seconds, gradually diminishing in width to a narrow streak of light, the length remaining the same as when I first saw it. Just previous to its fading away, it became flickering and wavy. The sky at the time was clear and cloudless and a fresh breeze blowing from the N.N.W.

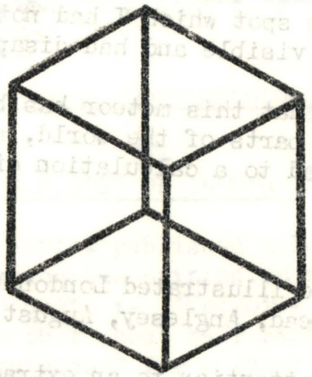
I am, &C., G. F. L.

(Mr. Glaisher, F.R.S., would be glad if observers of this meteor would furnish him with their accounts - particularly noting its path among the stars, its elevation at the time of its appearance and disappearance, &C. - directed to :-

13, Dartmouth Terrace, Lewisham,
Kent.)

Mr. Glaisher would appear to be an early U.F.O. investigator!

(ED.)



CAN SPACEMEN LIVE WITH THEIR ILLUSIONS?

Those of us who walk the Earth at the bottom of a sea of dust, vapours and gases have few sensory illusions. If Homo Sapiens ever had any troublesome illusions he must have adjusted to them early in his considerable history.

On the other hand, those others of us who are venturing into space - to construct orbital stations and to land on the Moon - very likely will be plagued by illusions. There will be no hazy atmosphere for softening images and enhancing depth perception. What they will see will be brilliant sunlit objects, against deep black of the Cosmos, in deceptive shifting perspectives.

By way of illustration take one of the few illusory curiosities remaining to the highly adjusted earthling. This is a simple two-dimensional drawing known as the Necker cube. (See above) As the viewer stares at the picture it seems to change its depth orientation. The front becomes the rear, and the rear the front. Then it seems to shift back to its original position. It continually reverses its orientation, and apparently it is not possible to stabilize the figure in either position.

The Necker cube has recently become more than a curiosity to space psychologists, because it may be among the shapes of

sections that will be used when manned orbital stations are actually constructed in space. Of course, the stations will be three-dimensional. But this should serve only to compound the problem of illusions.

Imagine a space station, a large tubular frame in the shape of a cube, standing out brightly against a velvet-black sky. As the astronaut approaches, the station seems to change from cube to diamond to various other regular and irregular shapes. One of the cube's sides actually is nearest to the astronaut. But which side ? It may be difficult to know, what with shapes and orientations continually seeming to change.

The skeletonized cube is not the only shape that produces such visual illusions. The torus station, which is shaped like a car tyre, and which is a popular choice of space architects, will also appear sliced, broken into pieces, or elliptical, depending on its illumination and the angle at which it is seen.

How do psychologists know that astronauts will be faced with the problem of illusions? The U.S. Air Force, which is interested in the construction of space stations, has been collaborated on studies of the phenomenon with British psychologist Richard Langton Gregory of the University of Cambridge.

Dr. Gregory and his co-workers have approached the problem with a small electric railway in a pitch-black room hung with heavy, dark draperies. Wire shapes coated with luminous paint are suspended from the ceiling, and then a test subject is seated in the tiny rail car. When the lights are turned off, the subject sees nothing but a shape glowing in the utter blackness.

The railway has a track 70 feet long. The subject is rolled toward, passed, and around the glowing object. The depth reversals and changing shapes are disconcerting to him, at the very least.

"We should expect these illusions to be experienced when astronauts are assembling parts of space stations in orbit," says Dr. Gregory. "They will add their quota of difficulty to the task".

Can these difficulties be overcome? Dr. Gregory sees nothing untidy in the suggestion that the builders of the space stations release dust around their structures. Such a miniature dusty atmosphere would diffuse sun-light and create a hazy halo around the station. As it does on earth, the haze would soften shadows and increase the reliability of depth perception.

Visual unfamiliarity with the Moon could also prove hazardous.

On Earth we are accustomed to sunlight coming from the sky and casting shadows below objects. We do not confuse an elevation with a depression. Dr. Gregory uses a small model of the Moon to show what an astronaut might see upon approaching the lunar body.

The Cambridge scientist shines a light obliquely across the model, just as the sun shines on the Moon during all of its phases except full and new. By altering the angle at which the light strikes the model, Dr. Gregory can make the surface appear pocked with craters or pimpled with mountains. When light shines perpendicularly on the model, thus simulating a full Moon and throwing no shadows, the surface seems flat and featureless.

Because shadows, which may be mistaken for solid features, are eliminated at full Moon, it may be that this is the best time for the manned lunar landings. Landing on the Moon at any time will be a risky undertaking, at least until mountains, craters and other topographical features are well known to the voyagers. May space travellers learn to live with the sensory illusions they find in their worlds !

Credit: Science Horizons

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PLANET MAY HAVE CONTACTED EARTH

A space probe from another world may have already picked up radio signals from earth and sent them back to people on a planet circling another sun, a physicist said today.

* Dr. D.M.A. Mercer, Lecturer in Physics at Southampton University, suggested that if this had happened, then the space probe would be loaded with scientific information ready to give it to us if we found the right "Open Seasame".

He was addressing the General Section of the British Association in Southampton.

The most likely way for one intelligent world to try to contact another would be to send out unmanned spaceships, loaded with computers and scientific material ready to give and receive information.

It would circle a planet, picking up radio waves, and then probably send back to its own world a replica of the message it had received.

There is, in fact, a case of some long-delayed echoes in a radio transmission investigation about 30 years ago which have never been explained.

It is entertaining to speculate that they might have been picked up by an exploring probe which has relayed the information back to its planet, many light years distant. A further message may be even now on its way to us.

If the planet was 15 light years away, its return signals should be coming about now, allowing 30 years for the return journey.

The bug-eyed monsters of science fiction are possible. Time-travel is not, but spaceships travelling faster than light might just be, said a scientist considering science fiction.

The scientist, Prof.W.T.Williams, Professor of Botany at Southampton University, said it was conceivable that there were man-like creatures swimming in the oceans of liquid ammonia on Jupiter, or rock-like men living on sun-scorched Mercury.

Credit: Portsmouth Evening News.

(* I.W.U.F.O.I.S. are shortly to have the opportunity of hearing Dr. Mercer in a forthcoming lecture.

(ED.)

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A COOL SPOT ON THE SUN

Analysis of photographs taken by an international team of scientists from an American airplane during the total eclipse of the Sun in July, 1963, shows a "cool" spot of only 20,000 degrees F in the Sun's corona, the luminous outer jacket which usually radiates at three million degrees F.

The discovery was made jointly by Dr. Armin J. Deutsch of Mount Wilson and Palomar Observatories at Pasadena, California, and Dr. Guglielmo Righini of the Astrophysical Observatory, Arcetri, Italy. The evidence is contained in a spectrogram, a special photograph, taken from the plane at 40,000 feet, well above most of the obscuring haze of the earth's atmosphere. It upsets long-held theories about the steady temperature output of the Sun.

FASTER THAN LIGHT

by Professor What ?

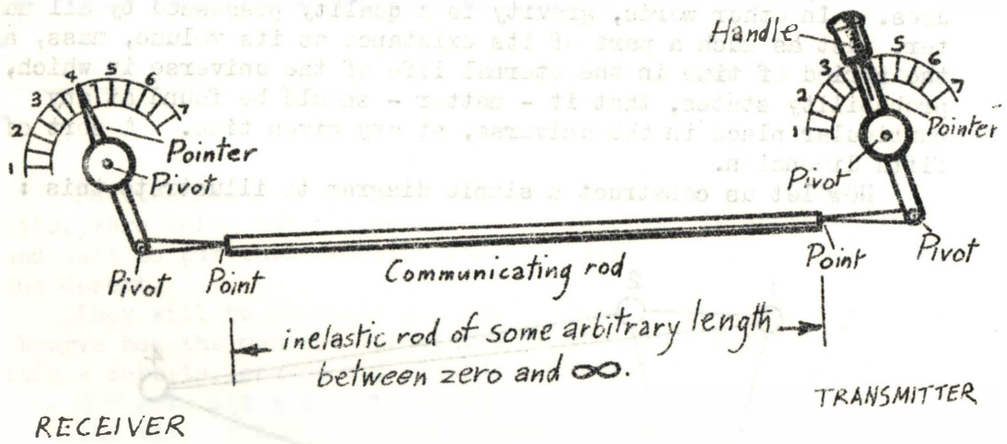
In consequence of the vast interstellar distances separating Earth from the planetry abodes of our (supposed) extra solar-system visitors, a number of factors arise which warrant some thought.

Assuming that our visitors have available a means of propulsion enabling their ships to achieve a velocity approaching that of light, they would, even in the unlikely event of their home-planet being situated in the vicinity of one of the nearer stars, be a very long time on the journey. Thus it would seem logical to conclude that any visitors from such remote parts, who are intent upon a scientific study of the earth and its inhabitants, would establish somewhere in space at least, within the bounds of the solar system, a base laboratory from which to operate. This would account for the frequency of their visits, and the comparative varity of their landings. For would it not prove rather an anti-climax for these space-travellers to spend upwards of 40 years on the journey, and then only get a brief, aerial glimpse of the mysterious Earth upon their arrival !

If therefore, we conclude that our visitors have in fact established a space platform from which to conduct their flights of exploration, it would seem reasonable to assume that they would wish to communicate from time to time with their 'Mother Planet', for similar reasons that a human terrestial expedition likes to keep in touch by radio with its own base camp, or headquarters.

Obviously radio communication is out of the question. It would be almost as quick to nip home and deliver the message personally ! Therefore we must assume that they have at their disposal a communications system vastly different to any we know. For a start, it must possess a velocity of propagation faster than light. Nonsense? But who can say? The velocity of light is only the limiting factor for a precise group of related phenomena with which we on earth, are familiar. What about telepathy? Has any attempt been made to measure the velocity of telepathic propagation or, in other words, the velocity of thought? But, you will argue, it's impossible to imagine anything with a velocity exceeding that of light, let alone anything tangible, which could be used for communication purposes. But <u>is</u> it? The diagram shows a system theoretically capable of instantaneously

transmitting information over any distance up to infinity. And it isn't really very complicated or difficult to comprehend.



If the handle is used to set the pointer at the transmitter end to a particular position on the scale, the whole thing is manufactured from some inelastic material. There are no slack joints in the system and, to eliminate the accelaration problems, the thing has zero mass, then the RECEIVER will instantaneously record the position of the transmitter handle. The length of the rod is irrelevant, hence the velocity of propagation over all distances (including those approaching infinity) using such a system, is infinitely great.

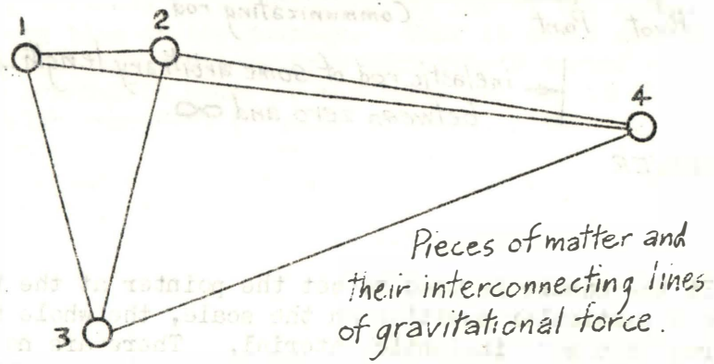
Obviously such a system is completely impractical, and is only introduced to dispel one or two popular misconceptions. Now let us try to imagine a practical system, one which would be of use to our visitors from space.

As nobody understands the nature of gravity, we'll use that as our 'communicating rod', and thus obviate the howls of protest which would doubtless arise if we chose something relatively well understood, like magnetism, for example.

Newton, of apple fame, tells us that every piece of matter in the universe 'has' this thing called gravity and, whats more important, every piece of matter is 'aware' of the gravitational field which every other piece has. Various other learned people

tell us that (they think) gravity does not need any medium in which to propagate its 'field', anymore than (they think) light does. In other words, gravity is a quality possessed by all matter, just as much a part of its existance as its volume, mass, and the period of time in the eternal life of the universe in which, probability states, that it - matter - should be found at any particular place in the universe, at any given time. A sort of fifth dimension.

Now let us construct a simple diagram to illustrate this :



Here we have four pieces of matter, randomly scattered in the Universe. Each piece of matter is connected to every other piece by a line representing the gravitational field linking them. Now we need to make our first assumption, namely, that gravity is an 'inelastic medium'. The only argument to support this assumption is that nobody can prove that it is incorrect, anymore than the writer can prove that it is ! However, there are a lot of assumptions like that, - religion, for example.

If we now make our second assumption, or supposition, if you like, we can imagine that our space travellers have found some means by which the 'gravity' of any particular piece of matter can be disturbed. Thus the effect of this disturbance should, according to Newton, be felt throughout the Universe or at least those parts of it which contain matter. There is no necessity

for the disturbance to be very large, it's really just a matter of making a 'gravity -receiver' sensitive enough to detect it. And there we have our faster than light intersteller communications network !

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TEST FOR SURVIVAL IN DESERT

Fourteen of America's newest astronauts, with minimum survival kits, were being taken into the arid wasteland of western Nevada and left to put into practice their classroom courses on living off the desert.

They will be on their own for a week. Space scientists will observe how the men use the sparse vegetation, trap desert wild life - rabbits, snakes and lizards - protect themselves from the sun, navigate and signal to "rescuers".

The kits each contain two quarts of water, two knives, matches, sewing, first-aid and signalling equipment and sunburn ointment.

The astronauts, already trained to survive in the jungle and the sea, finished their classroom courses on desert survival recently.

Reuter.

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JUPITER WOBBLES - SCIENTISTS

Radio astronomers have puzzled over intermittent bursts of flow-frequency radio signals from the planet Jupiter.

Mr. Glenn Berge and Mr. David Morris, of the California Institute of Technology's radio observatory, discovered two years ago that Jupiter's belt of radiation made an 18-degree wobble once every ten hours. This led them to their latest discovery - that Jupiter wobbles.

The reason, the scientists said, could be that the North and South Magnetic Poles of the planet are off-centre. A line between them - the magnetic axis - is about 35,000 miles from the centre of the planet, which has a diameter of 85,000 miles.

All planets have radiation zones which are believed to consist of solar radiation trapped in the planet's magnetic fields - the

fields are believed to be created by movement of liquid in a hot core.

The bursts of radio signals are caused, it is now thought, when Jupiter's rotation brings the magnetic poles into the proper position to beam the electro-magnetic radiation directly towards the earth. - AP.

Credit - Southern Evening Echo

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MOON FLIGHT MACHINES

Simulators are under development for Project Apollo, a three-man flight aimed at setting two of the men down on the surface of the Moon by 1970. One simulator has been used to test a new liquid-hydrogen-liquid-oxygen engine that will power the second and third stages of the giant Saturn 5 Moon rocket.

Since the 200,000-pound-thrust engine will be ignited at 30 miles altitude for the second stage and 100 miles for the third stage, it is being tested in a chamber that simulates conditions at those altitudes.

Later, when a total Apollo mission simulator is evolved, the astronautes will become familiar with the normal operations of their spacecraft and with the abnormalities they may have to face.

When Apollo is ready for the real flight to the Moon, its crew of three will be prepared. The astronauts will leave behind them a small group of simulator designers who will feel that they are almost up there with the space travellers.

Looking even further ahead American scientists are already building capsules to simulate the living quarters of a space station, each of which will house four men, and which will be kept spinning continuously for up to 30 days on a huge rotating arm.

This giant spinner, known as a rotational research facility, is being built by the North American Aviation Corporation at Downey in California. It consists of a 150-feet beam centred on a pivot mechanism. The capsules - 10 feet in diameter and 40 feet long - are normally placed at each end of the beam, though they can be anchored at any point along it for a number of different experiments.

The spinning motion will be similar to the motion necessary for providing artificial gravity inside a spaceship in the weightless environment away from the earth.

Each capsule is divided into four compartments - Kitchen, laboratory, bathroom and sleeping quarters for four men. They will live in these quarters and operate experimental apparatus.

Since the revolving motion is horizontal, the men will be pushed by a force similar to artificial gravity toward the outer walls of their capsules. To compensate for this force, the capsules will be tilted slightly, so that, as the men stand or walk in the capsules, they will be slightly diagonal to the earth's surface. To the men, however, their position will seem vertical and normal though they will feel a little heavier because of the excess gravity.

Spinning speeds will be varied for different tests as will other simulated spacecraft conditions such as wobble and tilt. Through their portholes, the men will see a simulated space environment, as might be seen from an orbiting space station.

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'BALL OF FIRE' SEEN IN SKY

Police in Kent and Essex were checking reports of an unidentified object seen in the sky over North Kent near the Isle of Grain early today.

Shortly before dawn, people said a "ball of fire" was moving over the area. Kent police tried to track its course, but it disappeared. Some reports said it was white, others that it was orange.

Saturday 12th Sept. 1964. Evening Standard.

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BALE-OUT ILLUSION

Police searched an area round Biggin Hill aerodrome in Kent yesterday after a man was reported to have parachuted from an aircraft. But a spokesman said later : "Fog may have created the illusion of a falling body".

Daily Mail. 28th Oct. 1964

The series "The Solar System", will continue in the next issue with an article on the planet Venus by John Peakins.

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"SPACELINK" was featured recently in a Polish Newspaper published in London, "THE POLISH DAILY", also featured was Antoni W. Szachnowski, chairman of the Anglo-Polish UFO Research Club, who has done a great deal of individual research and has contributed to "Spacelink". I.W.U.F.O.I.S. seem to be getting an international flavour with its contacts ! Recently an exchange was initiated between the Japanese U.F.O. Organisation and we look forward to sharing their news. Other contacts in the U.S.A. have been made and others are pending in Sweden, Germany and Holland. We invite any reader to write to the Editor for lists of addresses of overseas UFO fans.

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APOLOGY

Spacelink is sincerely sorry for the delay in publication of this issue. The Editor would like to point out that sheer lack of time is the main reason. Spacelink is at the moment very much a one-man affair, and spare time at that ! The NOV/DEC number did not of course come out and this issue is not intended to replace it, rather, the sequence will now be one short and this issue will be regarded as No.1 of Vol.2. The future publication schedule of Spacelink will now be quarterly, (4 issues per year). This will enable us to have more time to prepare material and will, it is hoped, mean a more interesting publication. Subscription will for the present remain at 2/- per copy (4 issues post free 9/4).

Editor

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Contributions gratefully accepted for publication, please type to 60 characters wide (including spaces). Typing not essential but owing to the limited time available for compilation it is a great help.

(ED.)