The British U.F.O. Research Association

RESEARCH BULLETIN

Vol. 4. No. 1. January, 1973

From the Director

After an interval of eighteen months from the publication of the last Research Bulletin, I am happy to say that the Committee have whole heartedly endorsed the idea of continuing with this periodical to complement the quarterly BUFORA Journal. Naturally there has been some criticism of the length of time taken to reinstate the Bulletin, the main argument being the lack of communication of the Association's activities to the membership, particularly those, who because of the distances involved are unable to attend the monthly lectures in London. Although this problem has always been with us, the future is looking brighter on the communications front. Firstly the Research Bulletin will return to its past status and it is my intention to issue this midway between publications of the Journal, resulting in members receiving at least eight regular mailings per year.

Secondly, the formation of local branches of BUFORA is to be encouraged. As you already know a new branch in Staffordshire was recently formed and is to hold its first meeting on the 26th January at the home of the Chairman, Roger Stanway. All members who live in Staffordshire and surrounding counties are invited to participate in its activities. The branch will provide West Midlands members with a focal point for research, a basis to meet socially and an opportunity for the mutual exchange of ideas.

Last but certainly not least, our National Investigations Co-ordinator, Richard Colborne, has given me to understand that he will be issuing a newsheet from time to time especially designed for BUFORA investigators outlining procedures and generally keeping members up to date with current investigations and outstanding cases. I hope therefore that 1973 and the future will reflect a definite increase in communication and thereby an improvement in member participation in the affairs of the Association.

Anthony R. Pace.

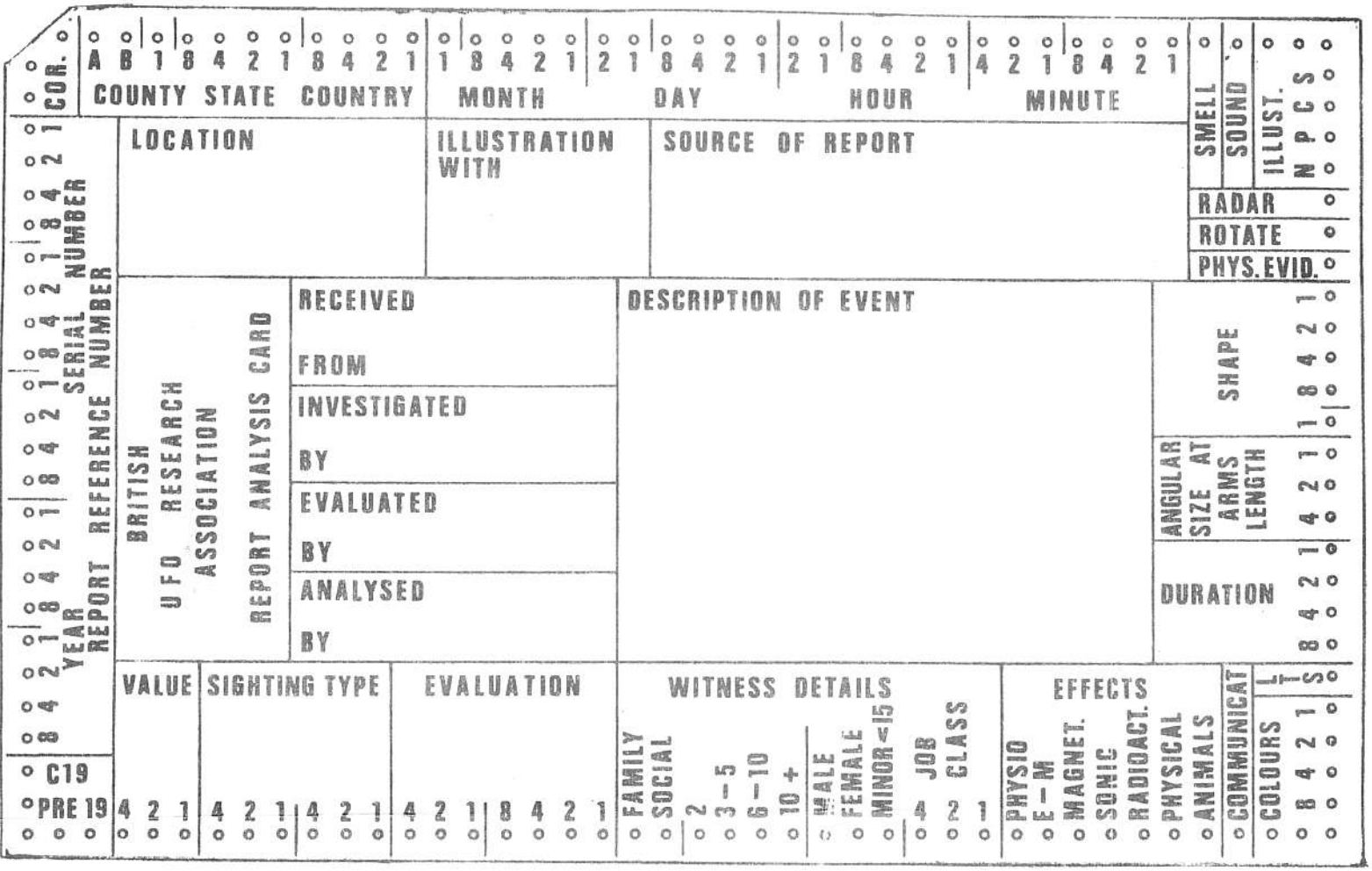
Renumbering the files

As a prerequisite to the Report Analysis Card Project, I am busily engaged in renumbering every UFO report on file. The original number series began at 1. and currently is running in the 1,300s. To replace this and to facilitate use of the cards, a new number has been given to each report beginning again at No. 1. with every new year. The card (illustrated over the page) shows that the Report Reference Number is made up of the Year and the Serial Number and hence each number is unique. By noting the first two digits of the Reference Number one immediately knows the year of the report. Old and new numbers will be cross referenced as a matter of course.

BUFORA REPORT REF. Nº 67001

Each UFO report is stamped with the above and its particular reference number. The illustration indicates the first report of 1967. The number will appear on every page of the report and on any ancilliary paperwork appertaining to it. Once this is completed microfilming can go ahead without any problems.

Report Analysis Card Project



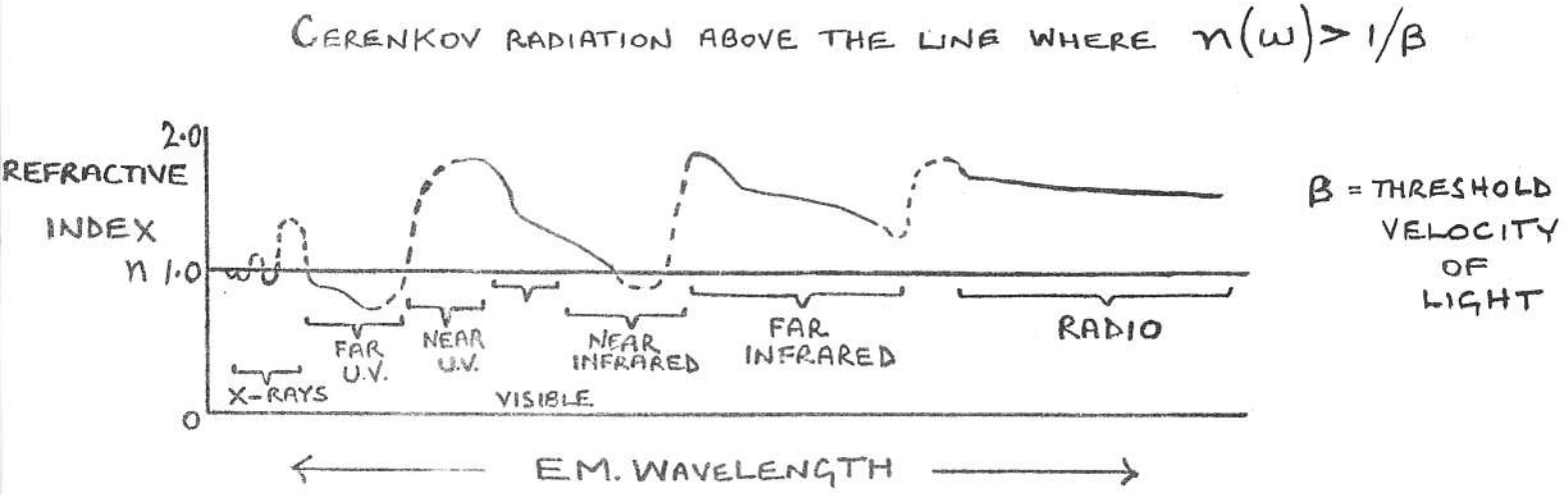
The full size illustration above shows the final format of the BUFORA Report Analysis Card of which an initial printing of 1,000 has been completed. Data from the unidentified portion of our UFO reports can now be transferred to these cards as a pilot project, with the intention finally of "carding" the whole of the sighting files as soon as this is practicable. A full description of the analysis card and its uses will appear in subsequent Bulletins.

The Cerenkov Effect

According to Einstein's theories of relativity, based upon the investigations by Lorentz into the behaviour of electromagnetic waves, nothing travels faster than light in a vacuum. However, the velocity of light in a gas, liquid or transparent solid varies according to the refractive index of the medium. Therefore, particles can exceed the velocity of light in a particular substance, and when this occurs they create a kind of shock wave of light, which can be of any frequency, but is most often found to be in the ultra-violet and blue frequencies. This is called Cerenkov radiation, and has been known since 1934. The light is best known as an " uncanny pale blue light " seen by Madame Curie, when she found bottles of concentrated radium solution aglow with this colour.[1] It was 24 years before an explanation was produced by Frank and Tamm. A similar blue glow is seen spreading through the water around a nuclear reactor, but can appear in a gas or certain solids. However, in air the radiation intensity is low. If particles (tachyons) could be made to exceed the velocity of light by a considerable amount, this blue glow would be seen.

Another point of interest is that the frequencies of electromagnetic radiation due to the Cerenkov effect are limited to certain bands within the ultra-violet, the visible, infra-red, and radio frequencies. X ray emission cannot occur. Now although it is perhaps wrong to speculate too much at this stage, we have all encountered many UFO incidents involving sunburn (ultra-violet ?), internal heating (infra-red ?) and radio interference.

A blue glow is also not uncommon. The diagram below shows the pass bands for this radiation as heavy lines, and the absorption bands as dotted.



The dispersion curve of a typical transparent medium over the whole electromagnetic spectrum.[2]

It has also been shown that Cerenkov light is produced by cosmic radiation entering the Earth's atmosphere.

Cerenkov radiation cannot exist in a simple plasma. However, Veksler (1956) showed that if the plasma is in a magnetic field, the refractive index is modified in such a way that the radiation is then possible in certain frequency regions, depending on a suitable choice of magnetic field strength and electron beam densities.

Another idea which was proposed by Veksler is based on an inverse Cerenkov effect. It is important to note here that this effect is not a particle collision process, but a wave front process caused by electromagnetic fields associated with, for example, electrons.

Veksler showed that if the electrons of an ionised plasma, subjected to a magnetic field, are moved at high velocity past heavy ions, these latter will acquire energy and be accelerated. The process is only efficient, however, for large input powers, and for bunched particles, or pulsed effect. Could this be a propulsion system available to UFOs? Further research has continued since 1958 but results are only published in the relevant specialist technical journals.

The detection of Cerenkov light requires photomultipliers, and the opportunities to check scientifically whether there is a link with UFOs are not likely to occur very often. However, if anyone interested could follow up this line of study, results could be useful.

Reference: Most of the data given above is taken from " Cerenkov Radiation and its applications, " by J.V. Jelley, publ. for the U.K. Atomic Energy Authority by Pergamon Press, 1958.

1. op. cit. page 1.
2. op. cit. page 20.

The first illustration in the Book, Plate 1, is a colour photograph of Cerenkov radiation in water around a nuclear reactor at Harwell.

This short but tantilising account of what seems to be a little known phenomenon was submitted by Charles Lockwood, Projects Officer. Are there any physicists amongst us who would care to comment on this effect?

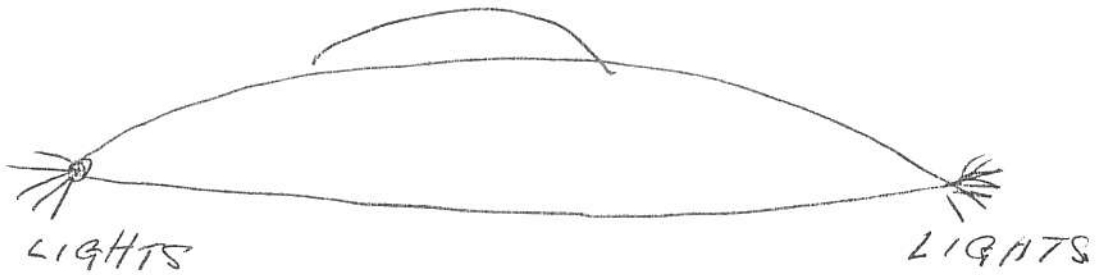
Wartime Sighting?

After a lecture entitled, " The UFO Enigma " given by Roger Stanway at Hanley Museum on Tuesday evening 16th January, a number of the audience were eager to ask their own particular questions or express personal opinions about the subject. Amongst these was a retired man, living locally, who recounted briefly an unusual experience which happened thirty years earlier during the war. Two days later a letter arrived from the man, Mr. Toft of Shelton, Stoke-on-Trent describing the incident which took place in October, 1942 at the Ordnance Factory, Radway Green, Cheshire. The letter is printed verbatim below. The sighting is under investigation.

Dear Mr. Stanway,

Re my statement last night about the Radway Green, Cheshire affair in 1942, put in its proper place the air-raid was in progress at Liverpool. We were under stress and the warning signal had gone at about 10.50.p.m., the A.R.P. was in operation and under the foreman of our sector were then going to the muster point on the factory.

Mr. W. Harper, foreman in charge with six men including myself were walking to the emergency station when looking towards Alsager we saw a large object like a double parachute, a small one resting upon a large cigar shaped object with a light on the two ends, floating from side to side, steady like a pendulum swinging. We thought it was a Jerry doodlebug and all at once realised that we would be a sitting target and threw ourselves to the ground and waited for the big bang; it never happened but after an interval, one of the crowd shouted that it was going off, and then we all saw two lights at the end of a cigar shaped object in the sky shoot up at an incredible speed towards Alsager and out of sight.



Drawing of the object made by Mr. Toft.
He noted that it was larger than "ordinary" aircraft.

Mr. A. Bradshaw, Chief A.R.P. was in the main office and will tell that they were mustered there and he watched this object fall into the field about 2,000 yards away and looking through his binoculars saw an aircraft in distress spiral down into the field, but he said it was too fast to hold in the glass and he could have been mistaken, the only other point that he agreed was there was no sound and the speed it moved off.

This object whatever it was caused quite a stir and tales in gallore sprung up but the children in Alsager, said the earth was scorched in a large patch where this fell, and therefore as I had an option on a house in Hassell Road, and a FEELING to to see the spot I saw a Mr. Smith who lived in Fields Road and with some children in the village went to look at the spot, it was quite a walk too. I can't say that I was very impressed, there was a large circle of discolouration and many footmarks a burnt place here and there but nothing particular to impress one, could be a natural explanation, so it was left to draw our own conclusions, in my own mind now I do think it was a U.F.O., but nobody thought at that time it could have been so, since the war was on.

In closing there must be plenty of people in and about Alsager, know of this but it would have to be investigated with caution, I beg to be.

Yours faithfully,

James L. Toft.

Check on "probe from outer space."

The astonishing idea that a probe from another civilisation may have arrived in the Solar system 13,000 years ago, and may still be actively investigating the earth, is now being considered by space experts. The theory was discussed last week by the British Interplanetary Society. Leading the discussion was Mr. Anthony Lawton, manager of the computer division of E.M.I. He drew attention to curious long-delayed echoes in signals broadcast from the Earth which, as yet, have no scientific explanation. The echoes were first noticed by radio pioneers exploring the ionosphere, the layer 50 to 200 miles above the Earth which reflects radio waves round the Earth. Signals that penetrate the ionosphere are normally dispersed in space and will not be reflected back. Usually it takes less than a second for radio waves to travel round the world by reflection from the ionosphere. As long ago as 1928 Störmer, the Norwegian mathematician and geophysicist, and Van der Pol, a Dutch radio telecommunications researcher, recorded echoes taking from three to fifteen seconds. This would place a reflector at least as far away as the moon's orbit, about 238,000 miles.

Now Mr. Duncan Lunan, a Glasgow University graduate has made an analysis of the delayed radio signals. He puts forward the theory that they can be read as a "pattern" which may be a message from outer space. It is, he suggests, as though an artifact in the vicinity of the moon's orbit was returning our own transmissions. These return transmissions from the artifact are arranged in a Morse-code style as if the beings responsible for the artifact are testing whether the intelligence of people on Earth is sufficiently developed to recognise a pattern.

The object would be first to attract attention and then to transmit information.

At the British Interplanetary Society meeting two of Mr. Lunan's charts, recording the results of his analysis, were shown for the first time. They reveal a marked resemblance to star maps of the Northern hemisphere and appear to mark the origin of the probe as the double star Epsilon Boötis, which is 103 light years away.

Positions of stars marked on the map appear to show the arrival of the probe in the solar system around 11,000 B.C.

Naturally, a good deal of controversy has been raised by Mr. Lunan's claims. His work will be published by the British Interplanetary Society, but the society insists that a full investigation into the delayed echoes be made to see if they could have a natural explanation.

If such an artifact exists it should be easy to find by radio and radar techniques. We could even inspect the likely position with an unmanned spacecraft. Just imagine what is implied: A space probe from another civilisation in the depths of space has been sent to inspect possible planets which orbit a medium-hot yellow star which we call the sun. There are perhaps 1,000 such stars of our type within our distance of Epsilon Boötis. The probe may have spent centuries in travel and its builders may have perished long ago. But in its memory banks and logic circuits it may contain the inheritance of an entire planetary culture.

The very thought is mind boggling. But we need much greater scientific evidence than we have at present to confirm or deny the possibility.

In 1960 the American astronomer R.N. Bracewell, of Stanford University, suggested that the sequences of long-delayed radio signals could mean that an alien space probe in the vicinity of the Earth might be trying to make contact by returning our own signals to us. No-one could place any meaning on them. This is precisely what Mr. Lunan claims to have done. When I spoke to him he told me that nothing he had found subsequently had given him cause to change his mind. Everything had fallen into place once he had found the key to the apparent coding. Mr. Lunan, 27, a bachelor and native of Edinburgh, is now a full-time writer of books on astronomy and space flight. He graduated from Glasgow University in English and Philosophy with French, physics and astronomy.

By KENNETH W. GATLAND, Space Correspondent
SUNDAY OBSERVER - 24th December, 1972

Northern Regional Conference

A provisional date has now been given for the 1973 Northern Regional Conference which is to be held at the Wakefield Albion Hotel. Further details, as these become available, can be obtained from the organiser, Mr. Trevor Whitaker, BUFORA Yorkshire Branch, "Sheraleigh" 8 Central Park, Well Head, Halifax, Yorkshire, HX1 2BT.

Projects Meeting

A meeting was held on 14th January at the Chairman's home and attended by members of the Research Section including the new Projects Officer, Charles Lockwood and the Research Director. This discussion was designed to formulate short and long term research projects and more important to begin immediately with some definite research work into certain priority studies.

The agenda which included ideas for discussion of both pure research and hybrid projects, is set out below:-

1. Development of UFO Detection Instrumentation.
2. Development of Investigation Techniques to encourage specialisation e.g. various environmental effects etc.
3. Photographic Analysis.
4. Transmission of Data to punched cards.
5. Microfilming of Files.
6. Re-investigation of good classic cases in BUFORA's files.
7. Monitoring of current non-British UFO events.
8. Development of Investigation Field kit.
9. Development of Identikit of UFO shapes, colours and sounds.
10. Research Fund-raising (equipment and generally)
11. Establishing consultants in various fields and also advisers who may be non-BUFORA members.
12. Improvement of "sky watching" procedures.
13. General data analysis projects.
14. Computer applications.
15. Evaluation procedures and techniques.

As you are aware some of these projects are already underway. For example the development of detection instrumentation is being actively persued by the Interstellar Research Group in Wiltshire, and although they have no direct connection with BUFORA we are hoping to forge closer links in the near future. (See Interstellar Research - A Brief Introduction.)

Our choice for the initial short term projects was item 8 (and 9) i.e. basically the development of a standard investigation field kit. An "identikit" of UFO shapes etc., would logically form part of this equipment. For the longer term we decided to study one of the commonly known environmental effects and chose the intriguing example of vehicle ignition failure in close encounter cases.

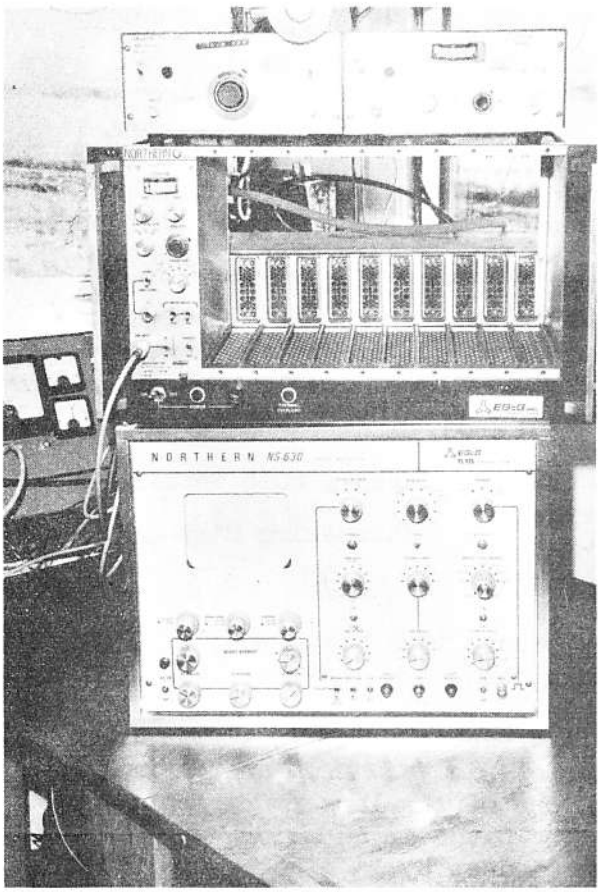
The Projects Officer would be glad to hear from members with any ideas, suggestions and case history material appertaining to both the short and longer term projects and indeed to the other topics on the agenda. Please write direct to the Research Headquarters.

Interstellar Research - A Brief Introduction

I.S.R. - InterStellar Research - is a small informal group of scientifically oriented individuals sharing a common interest in the experimental investigation of the concept that our civilisation is not unique in the universe. Whilst having received widespread attention both in and out of the scientific community for a considerable period, the concept still has a number of aspects which have not yet been studied in even the most cursory manner.

It is with one of these aspects:- that the universe may contain numbers of civilisations capable of practical interstellar space transport - that the I.S.R. has become primarily involved. The whole question of the possible existence of extra-terrestrial space vehicles (popularily known as "ETV's") has been obscured by the peculiar situation which has arisen as a result of the "flying "saucer" affair, a situation which must need little elaboration.

Consequently, although I.S.R.'s main interest lies in the suggestion that ETV's might sometimes be observable in or near the Earth's atmosphere and in methods of achieving such observations, no conscious reference is made to any information on this topic previously presented, no matter how derived.



Equipment for gamma-ray spectroscopy.

In order to test the hypothesis that such observations might be made, a prototype automatic monitoring system capable of detecting some of the various side effects which might reasonably be expected from the passage of a high-technology space-craft has been established in continuous operation on a hill in Wiltshire. The system has been constructed entirely on a private basis by the group's members, although much generous assistance has been given by Messrs. Ortec Ltd., a Luton instrumentation manufacturer. Permanent records of energies received by various sensors operating in selected portions of the electro-magnetic spectrum and measurements of certain geophysical parameters are made by a bank of paper chart recorders. The principal intention is to identify variations or disturbances in quiescent conditions which could only be generated by the presence of an energy source of a unique type - a type whose origin might feasibly be shown to be non-terrestrial. All the sensors currently employed are of a passive type, relying on the detection of energies emitted by the object being observed. The requirement for the emission of energy is not felt to be unreasonable as it could only be something of the kind which could lead to a unique identification in any case. Apparatus in use includes induction magnetometers, electric field meters and equipment for gamma-ray spectroscopy. Situated well away from interference sources and operating from independant power supplies, the system records about twelve parameters on a continuous basis and has recorded a smaller number since May, 1971.

The scope, sensitivity and reliability is the subject of a research and development programme which has found outlets in a number of related fields apart from the main one. Similarily, it is hoped that the geophysical information gathered by the system will prove to have independant value. Quite apart from the continuous improvements to equipment and facilities, plans are under way for the establishment of a number of additional stations, the first of which is already under construction.

The successful identification of a source of the type being considered requires the accumulation of a considerable quantity of data in as short as possible a time. This is felt to underline the need for equipment of the type currently being demonstrated, albeit on a tentative basis. The chances of the present system making an unambiguous and demonstrable sighting of a genuine ETV are considered very small; but it is, at least, a start. The development potential of the method is enormous: so much so, that it is possible to visualise a situation in the future where the chances of an alien space vehicle coming close to the Earth without our knowledge are quite remote. It is toward this goal, the significance of which could hardly be overstressed that the members of I.S.R., with the assistance of their many associates in science and industry, are steadily progressing.

One of the group's principal engineers, Mr. Robin J. Lindsey, handles enquiries, arrangements for visits etc. He can be telephoned on 0733 60963 (daytime) or 07314 3414 (evenings). Postal enquiries can be addressed to him at "Montague Villas" 87 Station Road, Whittlesey, Peterborough, PE7 1UE.

Clue to Space Evolution

An American astronomer has exposed new and important facts about the mysterious Quasars - immensely bright sources of light and radio waves in far-distant space. His findings could prove a big step towards understanding the origins of the universe.

Quasars have baffled astronomers since their discovery ten years ago. Their very brightness was a problem in understanding them, for they blotted out light from any surrounding material. So, they were treated as a separate class of object. Now, Dr. Jerome Kristian, of the Hale Observatories in Pasadena, California, has located Quasars at the heart of six galaxies and suggests they may be a part of galactic evolution. Although thousands of millions of miles wide, Quasars are tiny, compared with galaxies, but they are up to 1,000 times brighter than a normal galaxy.

Using photographs taken through the Hale 200-inch reflector, Dr. Kristian pinpointed the Quasars by a complex series of calculations of brightness and distance. " If the indications are that Quasars are part of the process of development of galaxies then it could mean that they are the start of galaxies, " said Dr. Kristian.

The next step was to try to determine whether Quasars played a role in all the millions of galaxies scattered throughout the universe.

Shropshire Star-29.1.73.

Kidsgrove "Ice" Fall

At about 12.30.hrs. B.S.T. on Friday, 29th September, 1972 M.F. Pace, a BUFORA member and his wife were proceeding to cross the main road at Kidsgrove, Stoke-on-Trent, when a piece of "ice" fell from the sky and impacted the tarmac surface a few feet away from them, narrowly missing an old lady on the zebra crossing. The "ice" was infact more like compacted snow and shattered into a number of pieces. Mr. Pace estimated the total weight to be approximately 2lbs. and took one of the larger fragments back to the laboratory where he works for examination. The piece in question, a rectangular block weighed $\frac{1}{4}$lb. and had a clean groove measuring $\frac{1}{2}$" deep by $\frac{3}{4}$" wide on one side. He reported that the weather at the time was dry. The sky was cloudy but bright and there had been no traffic on the road at the time of impact. He went on to suggest that the "ice" could have fallen from an aircraft especially as the busy Amber route to Manchester passed near this area.

I am a firm believer in the adage that there is always room for improvement and this goes for my first issue of the Research Bulletin. In the next and subsequent numbers I hope to improve not only the logical suquence of articles and the continuity but also the quality and interst of these, and would welcome comments, suggestions and positive criticism from our members.

Anthony R. Pace,
Director of Research
BUFORA Research Headquarters,
Newchapel Observatory,
Newchapel,
Stoke-on-Trent, Staffs.