

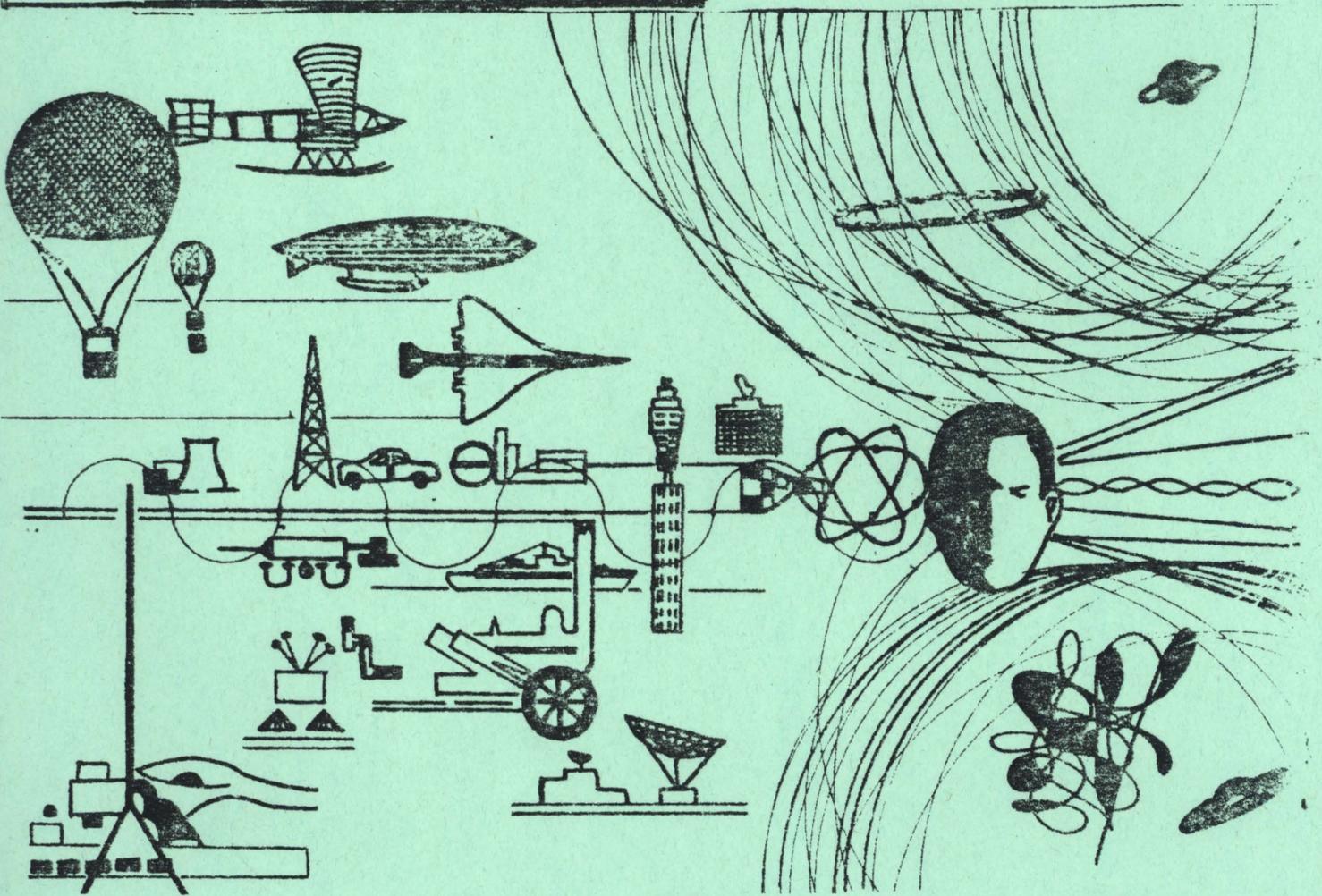
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SURREY INVESTIGATION GROUP
ON AERIAL PHENOMENA

15p

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SURREY INVESTIGATION GROUP ON AERIAL PHENOMENA

Editorial

When the Carnival is Over

Warminster - August 1973

The 'Evening News' of Tuesday, August 21 began with 'There'll be a welcome on the hillside for the flying saucer visitors' and then continued with details of the prophecy made by (guess who?) Keith Palmer, that there was good reason to expect a craft from another planet to make a landing and that the worlds greatest moment was about to begin It seems however, that someone had forgotten to inform the local Warminster paper, which had the glaring headline 'Colonels Dog Kills Pheasant', or had they seen it all before ...

It so happened that I intended to visit Bath that weekend and I took the opportunity of calling into Warminster and visiting the hill where the great event was due to take place.

There was indeed a large gathering, some forty cars and about a hundred people were settling down for the night to await the UFO's. This was a good opportunity to sell those old copies of PEGASUS, at least they could have some interesting reading to pass the night away. Within a few minutes all the magazines were sold, it was gratifying to see such enthusiasm.

I thought it might be an idea to interview a few of the people on the hill and  the semi-darkness  came across a number of old friends 

who had come along for a look-see and also a number of complete strangers.

There were devoted followers 'Had I heard of the so and so society?' I replied 'Yes' and in turn asked if they had Allen Hynek's new book? Allen who? I did not pursue the matter, but thanked them for their drink of 'scrumpy'. Next I came across a couple settled in for the night and awaiting with a genuine interest. 'There goes one' was the cry. The time 2105hrs 'and another' (2108hrs), but that was 'Skylab' and a piece of the rocket I explained. 'Is it one of those satellites then?' 'I didn't know you could see them from here'. Again at 2155hrs, the same pattern, the steady light, Southwest to Northeast, the same cries of amazement.

By midnight, I had seen enough satellites to make it interesting and so to bed sorry I missed the balloons ... maybe better luck next time.

O. Fowler.



Visitors to Warminster. Miss Jackie Hedger and Mr Peter McKechnie from the Southampton UFO group during a recent visit to Warminster following some recent press publicity. The Southampton group is run by Peter Hill, an ex-SIGAP committee member.



Watching the skies for UFOs. Two Warminster visitors take up SIGAPs slogan

LIFE DETECTION—EXTRATERRESTRIAL STYLE

by Carl Sagan

Mankind now possesses the technological capability of communicating at radio frequencies, over distances of many thousands of light years, with technical civilizations no more advanced than we. But before a program is initiated to search systematically for such signals it is important to demonstrate at least a modest probability that one technical civilization exists within such a range. The possibility that much more advanced civilizations exist—societies which can be detected over much larger distances—will be discussed presently. The pitfalls in placing numerical values on the component proba-

Galaxy, and is a function of the rate of star formation, the fraction of stars which have planets, the number of planets per star which are ecologically suitable for the origin of life, the fraction of such planets on which the origin of life actually occurs, and the fraction of such planets on which intelligence and eventually technological civilizations actually emerge (see, e.g., Shklovskii and Sagan, 1966; henceforth, Reference 1). L is the mean lifetime of such civilizations, and is strongly biased towards the small fraction of technical civilizations which achieve very long lifetimes—lifetimes measured on the geological or stellar

Even with slow rates of technological advance, extraterrestrial civilizations substantially in our future will have technologies and laws of nature currently inaccessible to us, and will probably have minimal interest in communicating with us. If this communication horizon is $\sim 10^3$ years in our future, other crude estimates previously published imply that only $\sim 10^{-4}$ of the technical civilizations in the Galaxy are accessible to us. The mean distance to the nearest such society is then $\sim 10^4$ light years. Radio detection of extraterrestrial intelligence seems to imply either (1) much larger telescopes or antenna arrays for the detection of civilizations within our Galaxy than now exist; or (2) attention to the nearer extragalactic systems, with smaller radio telescopes, to detect the very small fraction of very advanced societies which may choose to make their presence known to emerging civilizations via antique communication modes.

bilities of N , the number of extant technical civilizations in the Galaxy, are numerous and treacherous; nevertheless, there does seem to be a limiting factor whose significance has not always been appreciated.

While much more sophisticated formulations are now available (see, e.g., Kreifeldt, 1971) the first algebraic expression for N , due in its original formulation to F. D. Drake, will serve our purpose:

$$N = RL \quad (1)$$

Here R is the rate of emergence of communicative technical civilizations in the

evolutionary time scales (Ref. 1). But such civilizations will be inconceivably in advance of our own. We have only to consider the changes in mankind in the last 10^4 years and the potential difficulties which our Pleistocene ancestors would have in accommodating to our present society to realize what an unfathomable cultural gap 10^2 - 10^{10} years represents, even with a tiny rate of intellectual advance. Such societies will have discovered laws of nature and invented technologies whose applications will appear to us indistinguishable from magic. There is a serious question about whether such societies are concerned

with communicating with us, any more than we are concerned with communicating with our protuberances or bacterial forebears. We may study microorganisms, but we do not usually communicate with them. I therefore raise the possibility that a horizon in communications interest exists in the evolution of technological societies, and that a civilization very much more advanced than we will be engaged in a busy communications traffic with its peers; but not with us, and not via technologies accessible to us. We may be like the inhabitants of the valleys of New Guinea who may communicate by runner or drum, but who are ignorant of the vast international radio and cable traffic passing over, around and through them.

A convenient subdivision of galactic technological societies has been provided by Kardashev (1962). He distinguishes Type I, Type II and Type III civilizations. The first is able to engage something like the present power output of the planet Earth for interstellar discourse; the second the power output of a sun; and the third the power output of a galaxy. By definition, Type I civilizations are capable of restructuring planets, Type II civilizations of restructuring solar systems, and Type III civilizations of restructuring galaxies. I believe that a civilization of approximately Type II has, with an exception to be described later, reached our communications horizon. For computational convenience, I also assume that a civilization which has emerged to Type II technologies has also successfully passed through the critical period of probable technological self-destruction—the period in which terrestrial civilization is now immersed.

These ideas can now be restated as follows: let f_s be the fraction of technical civilizations which survive for geological, or stellar evolutionary time scales, L_s , and let L_d be the mean time to self-destruction of those Type I civilizations which do not achieve Type II technologies. Then,

$$L \sim (1 - f_s)L_d + f_s L_s \quad (2)$$

Accordingly, the total number of extant civilizations in the Galaxy,

$$N \sim R[(1 - f_s)L_d + f_s L_s], \quad (3)$$

is different from the number of civilizations within our communications horizon,

$$N_c \sim N_1 \sim R[(1 - f_s)L_d]. \quad (4)$$

The ratio of these lifetimes

$$N_c/N \sim [1 + f_s(L_s/L_d)]^{-1}, \text{ for } f_s \ll 1 \quad (5)$$

$$\sim (L_d/f_s L_s), \text{ for } f_s L_s \gg L_d. \quad (6)$$

Equations (5) and (6) are independent of R . Of the civilizations within our communications horizon only

$$N'_c \sim R f_s (1 - f_s) L_d \quad (7)$$

are destined to have lifetimes $\geq L_d$.

We now specialize to some illustrative numerical cases. I emphasize that values differing by several orders of magnitude from the ones I choose are certainly conceivable and may even be probable. We adopt (Ref. 1) $L_s \sim 10^9$ yr, $f_s \sim 10^{-2}$, and $R \sim 10^{-1}$ yr $^{-1}$. I further assume $L_d \sim 10^3$ years. From events of the past few decades a case can be made for L_d 1–2 orders of magnitude smaller; the resulting conclusions will be correspondingly more pessimistic. Independent of the choice of L_d , as long as $L_d \ll L_s$, we find $L \sim 10^9$ years, and $N \sim 10^6$ galactic civilizations (Ref. 1). Assuming such civilizations are randomly distributed, the mean distance to the nearest is a few hundred light years, and searches for such civilizations, using existing technology, would seem to be in order. However, if we count only those civilizations within our communications horizon, we find, with the same choice of numbers,

$$N_c/N \sim 10^{-4} \quad \text{and} \quad N'_c \sim 100.$$

In this case the distance to the nearest communicative civilization is $\sim 10^4$ light years—well beyond easy detectability, assuming that our communicant is at approximately the same technological level and we have no prior knowledge of where to look. And of these 100 societies only $N'_c \sim 1$ is likely to avoid self-destruction.

Almost all of these 100 civilizations of Type I or younger must have technologies significantly in advance of our own, and it may very well be possible to make contact with them. But the prospects are very

much dimmer than in the case of 10^6 communicative galactic civilizations. The situation can be improved somewhat by taking L_d —the interval to the communications horizon, rather than equal to it as we have assumed here; but we have been optimistic in our choice of L_d and I find it difficult to imagine that many civilizations $> 10^3$ years in our technological future would be anxious to communicate with us.

The situation seems to be that Type II or more advanced civilizations may be, in terms of contemporary terrestrial communications technology, at small distances from us; but, in the same terms, non-communicative; whereas Type I civilizations may be communicating—but tend to be too far away for us to detect easily. The operational consequence is that the detection of civilizations of Type I or younger is more difficult than has generally been assumed, and that such an enterprise will require much more elaborate radio systems—for example, very large phased arrays—than currently exist, and very long observing times to search through the $\sim 10^9$ stars which must be winnowed to find one such civilization.

On the other hand somewhat more serious attention must be given to the question of Type II and Type III civilizations—the level where, according to the previous argument, most of the technical

societies in the universe are. A Type II civilization can communicate with the Earth from our nearest galactic neighbors; a Type III civilization can communicate across the known universe—and this employing only laws of nature which we now understand. If only a tiny fraction of such civilizations are interested in antique communications modes they will dominate the interstellar communications traffic now accessible on Earth. The best policy might therefore be to search with existing technology for Type II or Type III civilizations among the nearer galaxies, rather than Type I or younger civilizations among the nearer stars.

ACKNOWLEDGMENT

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U F O R U M

Dear Editor,

The letter from your member who is abandoning Ufology for Christianity is interesting but neither objective nor scientific. The correspondent states that "the real truth...is...the thing that people are searching for." This is correct and I would ask him (or her) to ponder very carefully how one arrives at "the real truth".

Historically, the truth has been discovered by observation, deduction and the testing of hypotheses by scientific method. Copernicus, Galileo, Darwin and Marx did more for truth, real truth, than all the Saints and Popes in history. The UFO phenomenon is the greatest enigma of our century and the truth and also the future of mankind may depend on a solution to that enigma. It is, therefore, urgent to mount a vast programme of research on an international basis to find ways of investigating and resolving the problem.

Religion, on the other hand, is entirely subjective and there is more evidence for the UFO than there is for either God or Christ. I respect your correspondent's sincerity and ask him to think once more before burying his head in the sand of mysticism. And, if convinced, why the anonymity?

Peter A. Hill,
Wessex Association for the
Study of Unexplained
Phenomena. Chairman
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Shirley,
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Prospects for Comet Kohoutek

Comet Kohoutek will soon stand out in the dawn and evening skies. Astronomers are now putting the finishing touches to the biggest programme ever mounted to reveal some of the secrets of the Earth's most mysterious visitors from space

Dr Simon Mitton
is secretary of the
Institute of Astronomy,
Cambridge

When Comet Kohoutek pivots round the Sun at the end of the year, astronomers will follow its progress with the largest array of instruments ever trained on a single celestial object. The comet is now hovering on the brink of visibility with the unaided eye. When first discovered, by Lubos Kohoutek of the Hamburg Observatory on 7 March this year, it seemed possible that it would become the "Comet of the Century", or even the millenium. As professionals have watched it draw ever closer to the Sun in recent months, they have withdrawn these sensational epithets. By January Kohoutek should be a superb celestial display with its tail arcing across 20° of the evening sky, but it is unlikely to match the really great comets of the last century.

Lubos Kohoutek found the new comet fortuitously during a routine quest for uncharted asteroids. Although the fuzzy blob noted on two photographs was very faint, the significant point was the newcomer's distance: 400 million miles from Earth on discovery. Orbital calculations indicated that it would not reach perihelion (the point of closest approach to the Sun) until 28 December. It is most unusual for comets to give scientists nine months notice in which to prepare their experiments. Most of them rendezvous with the Sun only a few weeks after discovery, and there is then insufficient time to schedule observations on large telescopes (see Letters, vol 60, p 364). Astronomers plan to study Kohoutek in visible, ultraviolet and infrared light, and to map its radio emission. Instruments on the ground, in high-altitude aircraft, and deep in space will watch this cosmic wanderer particularly closely in December and January. As far as enrichment of scientific theory is concerned Kohoutek could well be the most significant comet of all time.

Structurally comets have two main parts, the head, or coma, and the tail. The coma generally has a soft circular outline, with the brightness increasing towards the centre, where a brilliant nucleus can sometimes be seen. The coma can be colossal; in the Great Comet of 1811 it had a diameter of 2 million km. As a comet nears the Sun it often develops a tail, which always points away from the Sun. These tails are extremely tenuous and can stretch out to 250 million km. Kohoutek's tail extended to five million km in October and it may eventually be 70 million km in length. The tails consist of glowing gas and dust; Earth has passed right through one without ill-effect.

Professional interest in comets centres on their origin and nature. Stephen Maran, who is leading NASA's Kohoutek operations, states "we would like to know more about cometary origin. Are they remnants of the formation of the solar system, or are they interstellar matter captured by our Sun?" Comets offer

a chance to study primordial matter in a relatively undisturbed state. Therefore they may furnish data on the primaeval composition of either the material from which the solar system condensed or the interstellar medium. Another important objective will be to find out whether there is any such thing as an icy solid nucleus residing inside the comet's head.

There are two principal models of comets. The more widely-discussed is the "dirty-snowball" concept of Fred Whipple of the Harvard Center for Astrophysics. He pictures comets as icy aggregations left over since the formation of the solar system, composed mainly of ice, methane, ammonia and dust fragments. As this sphere of ice nears the Sun, solar heat drives off gases and breaks down molecules. The material boiling out of the icy nucleus then forms the coma and tail. How a comet such as Kohoutek could start to grow an extended atmosphere when it was still in the ice-cold regions beyond the asteroid belt is difficult to explain in terms of solar heating alone. An adjunct to Whipple's model is the notion that a congeries of innumerable proto-comets is swarming the Sun in a great shell extending halfway to the nearest stars. Gravitational influences occasionally nudge an object out of this comet store and send it to sweep around the Sun.

Dust model revived

An alternative hypothesis is the classical dust model which Raymond Lyttleton, of the Institute of Astronomy, Cambridge, has revived on the basis of theoretical support. He envisages comets as vast clouds of 10^{22} meteoric dust particles. At large distances from the Sun this myriad swarm is loosely bound by its own weak gravitation. As the aggregation swims nearer the Sun each speck of dust must move on its own Kepler orbit. Because the cloud is three-dimensional the orbits lie in a family of planes, each plane passing through the centre of the Sun. Lyttleton has shown that the orbits converge strongly near the perihelion point, so that individual particles have a significant chance of hitting each other. Probably collision speeds are around 1 km per second, sufficiently high to raise the areas of impact to incandescence and produce the gas and dust seen in the tails.

But how do the seething swarms form? The material must come from dust clouds in the Milky Way. On its wanderings round the rim of our Galaxy the Sun has frequently burrowed through these black clouds. As it does so gravity drags dust towards the Sun; because the Sun is moving this debris is focussed more or less along an axis marking the Sun's path through the cloud. The accreted material can form new comets which eventually fall directly toward the Sun.



Dr Lubos Kohoutek

In *Nature* recently (vol 245, p 200) and at the Royal Astronomical Society last week, Lyttleton gave several specific predictions for Kohoutek which can be used to differentiate the models. Of interest to visual observers are the forecasts for tail production. If the icy snowball notion is correct, solar heating will be amply strong for rapid tail growth and interaction with the solar wind to be well under way by early December. According to the dust-swarm model, however, collisions will not be frequent before 23 December, and only slight tail production will take place before this date. Activity should then increase dramatically, and between 23 December and 3 January there should be a conspicuous gas and dust tail after perihelion. As a result of

impact heating a gaseous tail is likely to persist beyond 3 January. The crucial date is 23 December: if the dust-swarm model is correct a sharp increase in activity is expected, whereas on the icy nucleus model activity would build up in a steady fashion. Further tests can be made by measuring the size of Kohoutek's coma at intervals until mid-summer next year, since the dynamical theory behind the model forecasts changes in cloud size. Such an experiment is not easy to carry out in practice, however, because the detectable boundary of the luminous coma may not be simply related to boundary of the dust cloud.

Regardless of which model eventually turns out to be the correct one, the physical study of comets is of interest in its own right. The International Astronomical Union is currently battling to coordinate a massive programme of observations planned for Kohoutek. Simultaneous observations with a variety of complimentary instruments are more valuable than unrelated measurements, so a number of world comet days are proposed in IAU Circular 2584: 1, 6, 14, 22, 24, 27-29, December; 1, 4, 10, 15 and 22 January. A special effort will be made to watch the comet from high-altitude aircraft and space probes on these days.

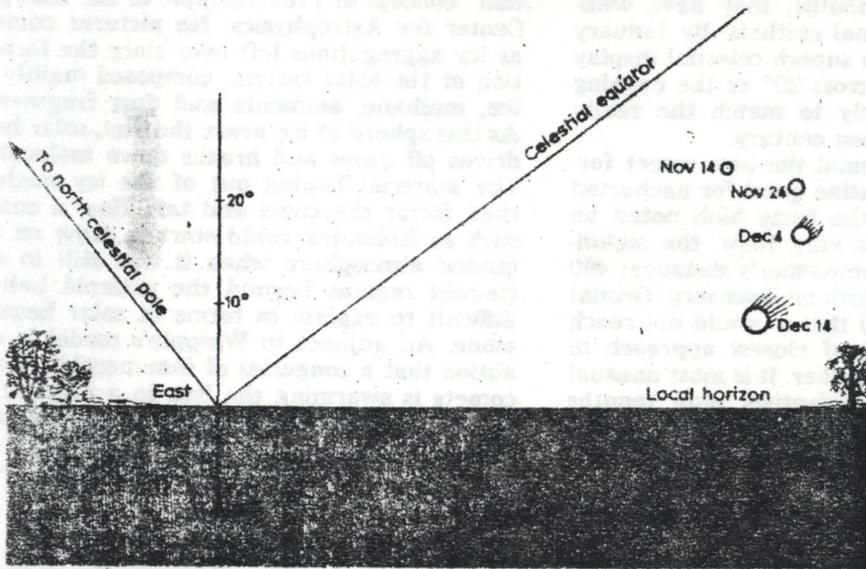


Figure 1 Expected appearance of Kohoutek in the dawn sky during November and December. This diagram shows the viewing situation for the latitude of most of England; it will be more difficult to see in Scotland. The Sun is 10° below the horizon

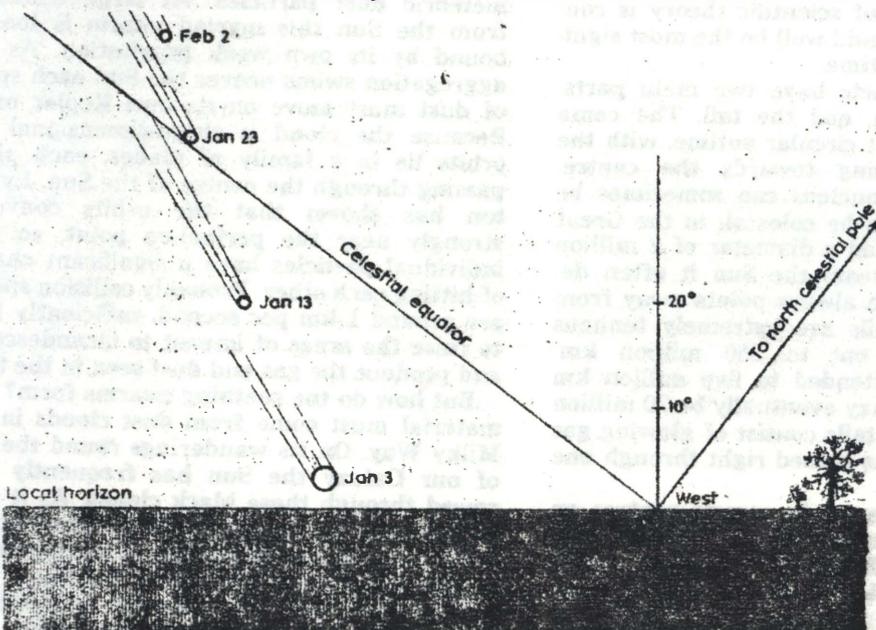


Figure 2 Kohoutek in January 1974 in the evening sky soon after sunset. The optimum viewing dates are around 15 January, when the tail may be 20° in length

Monitoring tail structure

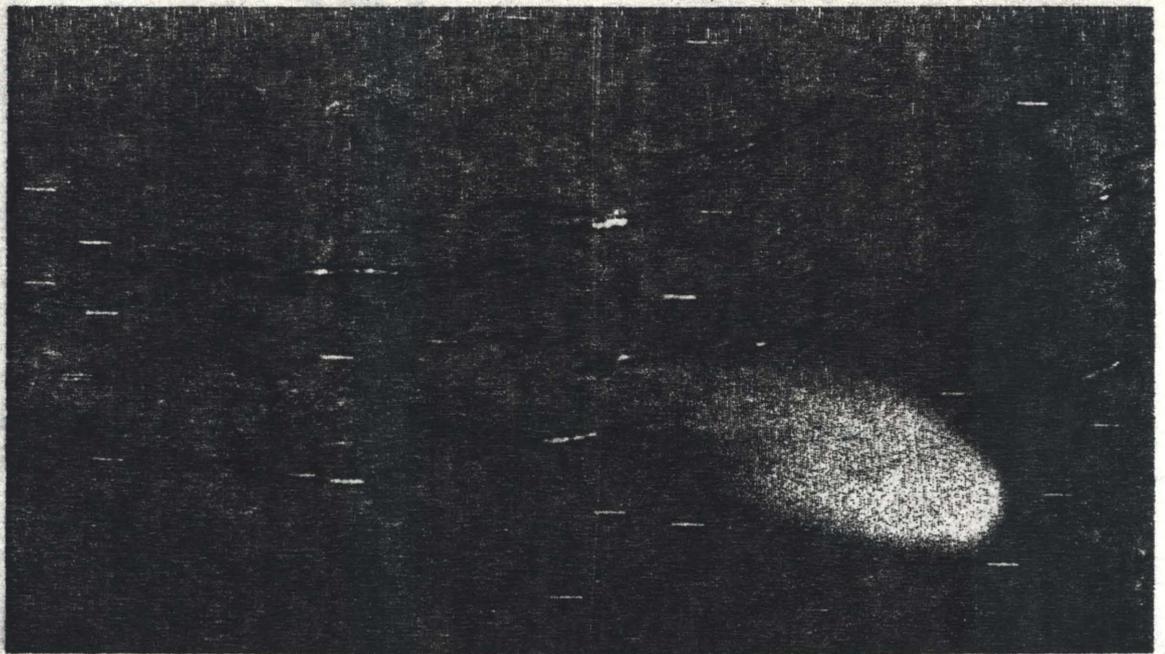
Not surprisingly, many astronomers are proposing fairly conventional programmes of direct photography. The main interest centres on monitoring the structure of the tail continuously, and searching for direct evidence of a solid nucleus inside the coma. Sequences of photographs of the tail can be used to study the interaction between cometary gas and dust and the particles streaming along in the solar wind. Amateur astronomers are urged to watch the inner part of the coma especially, as visual inspection could be very important in the event of unusual activity or even fracture. It is not unknown for comets to split in two after passing perihelion, or even vanish altogether!

Several observatories will be taking spectra of different parts of the comet. Here the aim is to investigate changes in the chemical composition and physical conditions, such as the ratio of gas-to-dust, as the comet develops. Several teams will try to measure the polarisation of the light from the comet; if they are successful it will be possible to calculate the magnetic field strength inside the object.

Greatest interest, however, attaches to the observations that will be made from spacecraft and with radio telescopes. Space scientists were especially intrigued by the behaviour of Comet Bennett in 1970, which turned out to be enveloped in an enormous cloud of rarefied hydrogen some 12-million km in diameter. Such a cloud produces light only in the far ultraviolet spectrum, a region which is inaccessible to telescopes on the ground. Therefore NASA will be sending the next Skylab team aloft with a camera specifically designed to photograph any giant gas bag that happens to be around Kohoutek.

Eight instruments on Skylab will permit the

Figure 3 Comet Arend-Roland 1956 h photographed with a blue plate on 3 May 1957 (US Navy)



crew to monitor Kohoutek in UV and visible light, even when it is only at a narrow angular distance from the Sun. These facilities are of particular importance for Kohoutek because it will be lost in the glare of atmospherically scattered sunlight for ground observers when it is brightest. Although Skylab has the prime viewing capability, three other spacecraft will be engaged in NASA's Operation Kohoutek.

Mariner 10, launched on 3 November, can take pictures from an entirely different angle because it is tens of millions of miles from Earth. Combined with Earth-based pictures this should give astronomers, for the first time, a stereo view of a comet's structure. Copernicus, orbiting Earth at 670 km will be looking at the deuterium and hydrogen content, measuring the temperature, velocity and production rate of hydrogen. OSO-7 is expected to map Kohoutek in the extreme ultraviolet, and it will also be on the look-out for ionised helium.

Turning to the radio astronomy experiments, perhaps the most optimistic is a proposal by scientists at the Jet Propulsion Laboratory literally to bounce radar signals off Kohoutek. From the returning signals, assuming that there are any, they may learn something of the nuclear structure.

Kohoutek is the first major comet since the surprising discoveries of many different molecules in the gas clouds of the Galaxy. If comets form from the matter in such clouds, as Lyttleton proposes, then radio emission from molecules may be detectable. NASA scientists plan to search for water vapour and ammonia with a 36-metre radio telescope. Radio astronomers of Universidade Mackenzie, Sao Paulo, plan a similar experiment with a 14-metre antenna in Brazil. Lubos Kohoutek and colleagues will make use of the 100-metre telescope at Effelsberg, near Bonn, to seek formaldehyde, hydroxyl, and hydrogen emissions in the radio waveband. The Kitt Peak 11-metre "molecule telescope" will be scanning Kohoutek for evidence of $\text{CH}_3\text{C}_2\text{H}$, HNCO , HCN , HNC , and the unidentified substance

X-ogen. Other radio groups will doubtless follow the progress of the wanderer across the sky; should its head or tail occult a strong radio source, the absorption spectrum will furnish details of the gases inside a comet.

The infrared astronomers are not letting the grass grow under their feet, being partly stimulated by the fact that Comet Bennett was bright at infrared wavelengths. Ground-based infrared measurements will be used to infer the temperature structure of the dusty parts of the comet and to aid the programme of identifying molecular species. Experimental packages hoisted aloft by balloon, rocket, and aircraft will peer at Kohoutek in the far infrared.

Viewing instructions

While the professionals are enjoying this beanfeast what can the man in the street hope to see? The diagrams show the position of Kohoutek in the sky, as seen from latitude 54°N (Cambridge), with the Sun 10° below the horizon. The optimum viewing will be during the first three weeks of January, after sunset. Present estimates indicate that the coma (on 30 October its visual magnitude was 7.8) will be between -2 and $+1$ magnitudes then, comparable to the brightest stars. It is not easy to predict what will happen to the tail. It is now 40 minutes of arc long with no structure. Bill Liller, of the Center for Astrophysics, suggests that it could be $10\text{-}20^\circ$ long in January—40 million km in physical extent. The experts seem to agree that 15 January will be the optimum date to see Kohoutek in Europe and N. America. It will probably be visible by naked-eye until the end of February, and in binoculars until Easter. To match the brilliant spectacles of the last century, however, it would have to blaze forth even in broad daylight, which now seems very improbable. Nonetheless, for professional watchers Kohoutek could herald the greatest advances in cometary physics since the time of Newton and Halley.

FACT OR FOLKLORE

A widespread mythological theme concerns the Man in the Moon: it relates how he (or other figures drawn by fancy on the face of the Moon), came to be there in the first place. Some of these stories have the touch of a UFO report about them.

The Maori tale of Rona, for instance, tells how she went out one night to fetch some water from a neighbouring stream. The moon was shining at first, but at one time it went behind the clouds, and Rona was left to stumble along over roots and boulders in the darkness. In her anger she cursed the Moon, crying out "Oh, you cook-headed Moon not to come forth and shine". The story goes on to relate that the Moon took offence at this and coming down at once to the Earth, it seized the girl and carried her off to the sky. Rona caught at a tree as she passed by, but in vain, for the tree was uprooted. (Dixon, Oceanic Mythology p. 38).

Several elements in this legend are repeated in present-day UFO reports. Firstly it must be noted that Rona was going in search of water. As I have shown in my booklet on Water Symbolism in UFO Encounters, the fetching of water by the UFO percipient is a common prelude to an encounter with a Flying Saucer. This aspect of the story of Rona is to be compared with the tale of Hjukki and Bil (the Scandinavian 'Jack and Jill'), who were also snatched up by Mami (the Moon), when drawing water with their bucket and pole. In modern times, Oliver Thomas disappeared en route to get a bucket of water from a well. Apparently he had been taken from above, since his footprints in the snow suddenly ceased at one point. (Steiger, Strangers from the Skies, p.33). Noteworthy examples of UFO encounters initiated by the fetching of water are the 1933 Belo Horizonte and the Kelly, Hopkinsville, affairs, and the case of Dr 'X' in France.

If the 'Moon' in the story of Rona was a UFO, then we might conjecture that it was the aerial machine which uprooted the tree, and not the heroine as stated in the tale. The uprooting of trees and bushes is sometimes mentioned in UFO reports.

Other accounts of abduction by entities from the sky are common in world mythology. When Woden was out hunting with the spectral skypack, people were in danger of being carried off. The Vorys-mort or 'Forest Man' of the Finno-Ugric Siryan people was a gigantic being who moved in the form of a whirlwind, abducting men and cattle. According to another Maori tale, a sky-cannibal named Whaitari used to come down and

capture people in a net; while a legend from Rotuma, an island to the West of Samoa, tells of sky-people descending to earth to fish for men. A version of the universal folkloric theme of the Swan Maiden, from Malahera, Indonesia, speaks of a sky-maiden who took a young man up into the heavens in her flying palace.

Fairies, dwarfs and elves were notorious abductors of unwary human beings. Although they were the spirits of nature and the countryside, they commonly inhabited the atmospheric regions and snatched up people from above. The above-mentioned 'Forest Man' of the Siryans seems to be just such a being, a denizen of the forest, yet an aerial whirlwind. This wind was a favourite vehicle of the abducting spirits, and was known as the 'Fairy Wind'. It is the sensation of this whirling wind which is such a common element in the accounts of out-of-the-body experience during which the 'soul' or mobile centre of consciousness dissociates from its normal frame of reference, bodily or otherwise. According to primitive ideas, 'soul loss' was caused by a spirit, or a sorcerer, abducting the 'soul'; and so occasioning illness of a certain description. When a person has had a too drastic UFO encounter, or out-of-the-body experience, we find similar symptoms of illness; nausea, sore eyes, rashes, headaches, tingling sensations, etc. etc.

The Aymara Indians of South America believe that children's 'souls' might be captured by the spirits of roads, hills, rivers, fields and churches. All such topographical features have been mentioned in UFO and out-of-the-body reports, especially roads and hills. So too are rivers featured in these accounts (see the story of Rona, above). They are all sacred places to the primitive mind, as are fields and, of course, churches; and sacred places are those spots where something out-of-the-ordinary has occurred - such as an out-of-the-body experience or UFO encounter, an altered state of consciousness.

Dan Butcher, February 1971

INTERVIEW

SIGAP Interviews Dr Joachim P Kuettner (Exclusive)

Dr Kuettner became Chairman of the AIAA (American Institute of Aeronautics and Astronautics) UFO sub-committee in December 1968. As a result of their investigations the 'Journal of Astronautics and Aeronautics' published 'UFO: An Appraisal of the Problem' in 1971.

The AIAA UFO sub-committee became one of the first major bodies to criticise the 'Condon Report' and details of their report are itemised in Allen Hynek's 'The UFO Experience: A Scientific Enquiry' on pages 220 and 221.

Dr Kuettner met Omar Fowler and Graham Raine of SIGAP at a quiet hotel near Bracknell, Berks. Although associated with the ESSA Research Laboratories in Boulder, Colorado, Dr Kuettner has been working at the Bracknell Weather Centre recently.

During the discussion the questions naturally turned to the work that had been carried out by the UFO sub-committee to establish if UFO's presented a 'scientific problem'. Dr Kuettner said that much to his surprise, he found that there was a problem to answer and the conclusion of his committee was 'YES'.

This reply contradicted the findings of the Condon Report and although the latter had found explanations for 95% of the UFO reports investigated by them, they made the mistake of ASSUMING that the remaining 5% could also be explained if further information could be found. The Condon Committee had been made up of open minded people but, at the same time people without any experience in the study of UFO's.

The findings of the Condon Committee caused many problems. Condon was a well known scientist and a man of stature in his field. As a result of this his report will only be neutralised by an investigation by scientists of greater repute. Dr Condon had been one of the few men to stand up to Mc Carthy during the great 'witch hunting' days and as a result, had gained quite a reputation. This in turn had made it very difficult in seeking grants for UFO research and in gaining scientific support in the USA. Too many scientists were reluctant to jeopardise their reputations by committing themselves on UFO's.

Dr Kuettner then gave his opinion on the difficulties associated with the investigation of UFO's.

There was the question of the investigation of physical evidence, if there had ever been any evidence, where was it? One could try and analyse the problem in a theoretical way and try and form a hypothesis, but it appeared that the right path to take, would be the detailed study of statistical research, this was the way to go.

At this stage in the conversation we discussed SIGAP's plans for returning to UFO witnesses after a period of two years and questioning them again about their experiences: what would their answers reveal, had they seen more? Were they still as distinct in their recollections or had they been put away? Dr Kuettner thought that the idea was a good one and could reveal some very interesting facts about witness behaviour. He had his own comments to make on the difficulty of accepting the evidence of a single witness. He had experienced the difficulty of describing a UFO. He had seen one while flying at night in an aircraft en route from Denver and still remembers the amazement at seeing a strange light pass by close to the aircraft. The sudden shock had made him incapable of reacting with a proper assessment of the situation, the aircraft had swerved to miss the lights and in the darkness, there a distinct problem of orientation.

On the subject of UFO watches Dr Kuettner had a number of comments to make. What instruments could you take on a UFO watch? For instance, a magnetometer was useless unless there was a close encounter and cameras were always inadequate. In short, direct skywatching had not yielded anything important, we must concentrate on statistical analysis.

Finally, we discussed the study of UFO's in Britain, the apparent lack of interest by government bodies. Were there many groups like SIGAP in the UK and were they all run on a voluntary basis? What happens to the reports? Did we know of Hynek's aim to form a major centre for UFO investigation, with a field investigation team and computer back up? There were so many questions to be asked about UFO's and so few answers

O F FOWLER
Chairman
SIGAP



SIGAP Chairman O.Fowler (left), presenting a number of "Pegasus" publications to Dr Kuettner the Chairman of the A.I.A.A. during a recent meeting in the U.K.