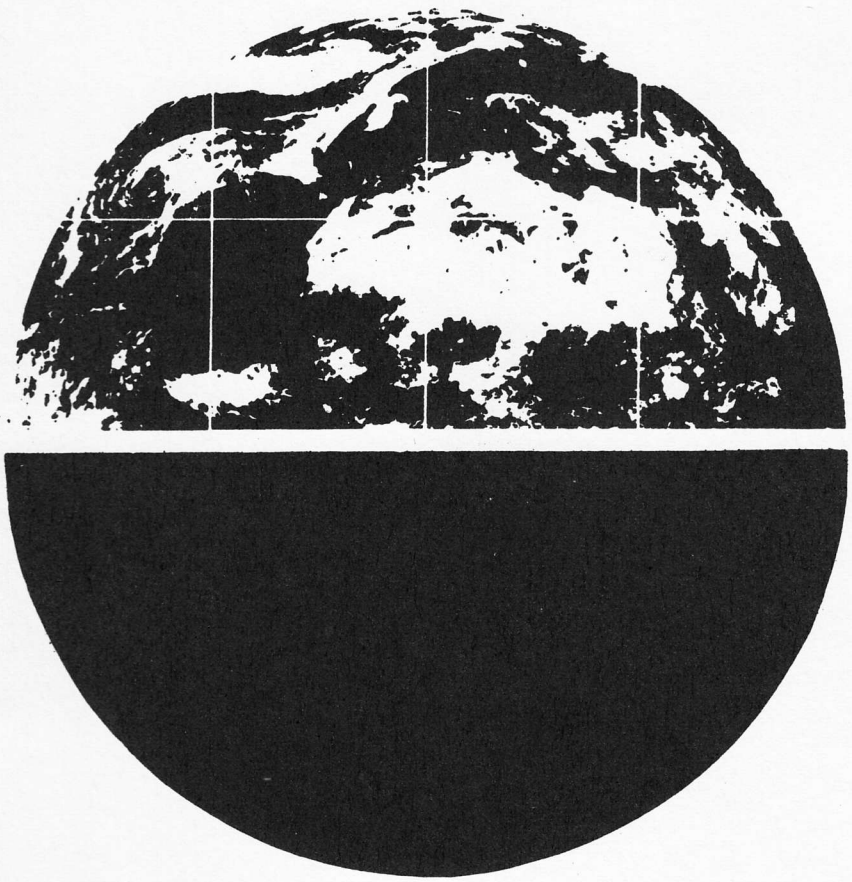
ISSN 0143-8840

The Journal of Transient Aerial Phenomena

September 1988 Volume 5 No. 3



Published by the British Unidentified Flying Object Research Association

THE JOURNAL OF TRANSIENT AERIAL PHENOMENA
Devoted to the scientific study of unusual aerial phenomena.

September 1988 **Volume 5 No. 3**

Published by : THE BRITISH UNIDENTIFIED FLYING OBJECT RESEARCH ASSOCIATION (BUFORA Ltd)

The JOURNAL OF TRANSIENT AERIAL PHENOMENA is published in March and September each year by the British Unidentified Flying Object Research Association Ltd.
Chairman: Arnold West

Editorial enquiries should be addressed to the Editor-in-Chief (J-TAP), 40 Jones Drove, Whittlesey, Peterborough, PE7 2HW. The EDITORIAL BOARD will be glad to consider contributions from any source. The Board may seek advice on the suitability of contributions for publication from external referees. For guidance please refer to the inside back cover of this publication. No guarantee of publication can be given. The views expressed by contributors are not necessarily those of the Editorial Board or BUFORA.

Enquiries concerning membership of the British Unidentified Flying Object research Association (BUFORA) should be sent to the Membership Secretary, 16 Southway, Burgess Hill, Sussex, RH15 9ST.

The Journal of Transient Aerial Phenomena is sent free to members of BUFORA and on an exchange basis to selected individuals and organisations throughout the world. It may also be purchased from the Director of Publications, 16 Southway, Burgess Hill, Sussex, RH15 9ST.

Details of other BUFORA publications may be obtained from the Director of Publications at the address above.

Advertisment communications should be addressed to the Director of Publications, and will be accepted on the basis that the product or service being offered is pertinant to the science and study of transient aerial phenomena. Classified advertising is not accepted.

DISPLAY RATES

FULL PAGE	£45
HALF PAGE	£25 (vertical or horizontal)
QUARTER PAGE	£15
EIGHTH PAGE	£ 8

PLEASE NOTE : All advertisements are black and white only.

EDITORIAL

STEVE GAMBLE, DIRECTOR OF RESEARCH.

In a few weeks time we will be entering 1989. This will be a significant point to celebrate a number of anniversarys in the UFOlogical calender.

For JTAP 1989 will celebrate ten years of production. The first issue rolled off the presses in time for the the First London International Congress.

During those ten years JTAP has had a number of different editors. Our first editor (and also then Director of Research) was Tony Pace. He was followed by Richard Beet, who had previously been an editor of the BUFORA Journal. Richard was followed by Peter Hill, again a Director of Research. Peter was followed as editor by Bob Digby. Definitely a move up market here as Bob was also Chairman of BUFORA at the time. After a short period when John Barrett and myself shared the job, I became sole editor. As well as being Director of Publications, John Barrett was also editing the BUFORA Bulletin and did much ground work to launch the project which became the book 'UFOs 1947-87'.

As they say, so to myself. The next issue of JTAP (March 1989) will mark the end of volume 5. With the end of volume 5, I will be stepping down from the editorship. The BUFORA Council are taking this opportunity to re-evaluate the future of BUFORA publications and are considering a number of different options. I hope to be able to give you more information in the March edition.

Also celebrating a tenth anniversary in 1989 will be the International Committee for UFO Research (I.C.U.R.). The first meeting of the group which went on to be called ICUR was held at the First London International UFO Congress in 1979. ICUR is intended to be in effect a UFOlogical 'United Nations' and has members in a number of countries.

Of course, if ICUR is ten years old and it was formed in conjunction with the First London Congress, then the forthcoming International Congress to be held in London in July, must also mark the tenth anniversary. Over the years the London Congresses have attracted a wide range of speakers including Dr Allen Hynek, Dr Willy Smith, Walter Andrus, Paul Norman, Dr Allen Tough, Per Anderson and Bertil Kuhlemann.

Obviously there is a great deal happening in UFOlogy at the moment. But are we any closer to a solution ? Perhaps we are, perhaps we aren't. We certainly know more about the phenomena now than we did then. I am reminded of a story I read a few days ago. Next year the Medical Research Council will close its Common Cold unit after some forty years. When it was set up they were going to eliminate the common cold within two years! If professional full-time researchers have such problems working on a well defined problem, we part-time UFO researchers should not lose heart at the slow progress we make in our studies.

Hears to the next ten years!!

THE MYSTERY CIRCLES - STATUS REPORT - PART 2.

Paul Fuller

The first part of this article appeared in the previous edition of JTAP. The final part of the article will appear in the next issue of JTAP.

This section of the paper puts forward evidence in support of the Vortex Theory of Circle Formation.

---

4. THE VORTEX THEORY OF CIRCLE FORMATION

4.1 Since 1986 BUFORA's research of the "mystery circles" has led to the mutual exchange of information with the Tornado and Storm Research Organisation (TORRO), based in Bradford-on-Avon in Wiltshire. Formed in 1974, TORRO constitutes one of the few truly independent groups of meteorologists operating in the UK, and its work involves professional consultancy and data analysis (eg the calculation of risk factors for tornadic damage to the proposed nuclear reactor at Sizewell). TORRO holds the largest collection of British tornado reports (1500+), which dates back to the 9th century, and it also collects data relating to thunderstorm activity, hailstorms, ball lightning, weather disasters and falls of anomalous material from the sky (e.g. large blocks of ice, animals and dust). Since 1980, the Director of TORRO, Dr Terence Meaden, has visited, measured and photographed over 200 circle formations in southern England. The evidence Dr Meaden has obtained clearly supports his hypothesis that a previously unrecognised stationary, descending atmospheric vortex is producing 'mystery circles'. This theory was first published at the Second TORRO Conference on Tornadoes and Storms, held at Oxford Polytechnic on June 4th 1988 (receiving publicity via the 'New Scientist' 2nd June 1988 pp 38-40, and in the London 'Observer' 5th June 1988). By all accounts, the Vortex Theory of Circle Formation was well received by almost 100 leading experts in vortex generation and meteorology.

4.2 WHAT ARE VORTICES?

Natural atmospheric vortices serve to transport air from one place or altitude to another to achieve a more uniform distribution of heat energy throughout the atmospheric boundary layer (the lowest kilometre of the atmosphere). The commonly recognised natural vortex is characterised by an ascending column of rotating warm air which is maintained by a continuous supply of air being drawn into the base of the vortex by convection. Meaden[2] distinguishes between the two main classes of vortex according to the weather conditions under which the vortex forms :-

a) Major Whirlwinds typify bad-weather conditions and originate inside cumolonimbus or cumulus clouds where vigorous upcurrents are set into

rotation and then extend their influence below the cloud base (perhaps by as much as 10 km in height). Major Whirlwinds (often called 'tornadoes') often reach the surface in the form of a well-developed funnel cloud which tapers from a broad exit at the base of the cloud to a narrow tip or spout which can ascend and descend frequently, causing widespread destruction and death[3].

b) Minor Whirlwinds characterise fair-weather conditions and consist of (usually less violent) vortices originating at ground level, normally without a parent cloud, where rising thermals of relatively warm and unstable air form under prolonged insolation in sheltered locations on (near) windless days. These vortices are set spinning by wind shears (the variation of wind speed with height) or by the presence of a micro-front m(e.g. an on-shore sea breeze).

Both major and minor whirlwinds are invisible unless they pick up water vapour (when the air pressure within the vortex is low enough for water droplets to condense) or unless they pick up debris[4]. For a general introduction to vortices I must recommend the reader to obtain a copy of Ingrid Holford's "The Guinness Book of Weather Facts and Feats" (1977), chapter 15. For accounts of the wide range of anomalies associated with vortices I recommend the fascinating "Tornadoes, Dark Days, Anomalous Precipitation and Related Weather Phenomena" by William R. Corliss (The Sourcebook Project, 1983). These accounts are very important to our understanding of the 'mystery circles' because they indicate that natural vortices are capable of a large variety of 'impossible' feats.

Some of the more relevant anomalies described by Corliss and others include :-

- the ability of vortices to develop in 'swarms', with over 100 forming on a single day in the UK[5,6];

- the ability of some vortices to leave large, semi-circular "suction marks" in soft, wet ground due to the pressure gradient within their funnels[7];

- the appearance of unusual luminous phenomena (e.g. 'tornado lights' and small balls of light) as well as thunder and lightning during some vortex events[8,9]. These phenomena may, of course, be reported as UFOs;

- the occasional appearance of a vortex without any warning "out-of-the-blue" on a fair, windless day with an explosive retort[10];

- the ability of some vortices to deplume poultry and birds in flight of their feathers[11]; and

- the ability of some vortices to leave burn marks on humans, to leave charred and dehydrated vegetation, and to be accompanied by unusual sounds and smells[12].

4.3 The evidence for the Vortex Theory of Circle Formation

4.3.1 Vortices appearing over water surfaces and in the desert frequently produce spiral patterns on the water or the sand because of the need for a continual supply of air at the base of the vortex which flows in from all directions. These vortex-produced spiral patterns clearly coincide with those patterns found within 'mystery circles' and described in section 2 of this article.

> "Dust-devils", or rotating columns of sand travelling rapidly rapidly across open spaces, are not uncommon objects to desert travellers. Their height and breadth is often very considerable and the evidence of the eddies causing them very great. The smallest of this type I have seen was only 5 ft high, that is, the visible column of sand, and less than a foot in diameter. It passed so close to me that it was easy to see its narrow cycloidal path marked on the sand, which was deposited and lifted as the eddy travelled on at not less than 15 mph, although the wind was actually very light."[13]

4.3.2 Vortices can remain stationary under certain conditions (including, presumably, a low pressure wind and the existence of local topography to act as a blocking agent. Holford[14] cites a vortex remaining in the same North Dakota field for 45 minutes, whilst Capes[15] recounts when walking in the Egyptian desert :

> "Hearing a swishing sound behind me, I turned and observed a large revolving ring of sand less than a foot high approaching me slowly. It stopped a few feet away and the ring, containing sand and small pieces of vegetable debris in a sheet less than one inch thick, revolved rapidly around a circle of about 12 ft diameter while the axis remained stationary. It then moved slowly around me after remaining in one spot for at least thirty seconds, and slowly died down."

4.3.3 Although vortices are normally quite diffuse, particularly during major vortex events, very close-up photographs of vortices reveal the existence of a precisely-defined vortex funnel at the core of the vortex. It is this vortex funnel, rather than the overall vortex, which is creating the 'mystery circles'. See Holford (p 193 and back cover) for examples. The ability of some vortices to create such precisely-defined vortex funnels is supported by numerous accounts of vortices which lack severe atmospheric turbulence in the

area immediately surrounding the funnel, e.g.

> "Suddenly a dull sound was heard, somewhat like the rumble of a carriage drawn by a horse at full gallop, then a whirlwind of irresistible force was formed, which suddenly and instantaneously carried off the roof of the house, and dispersed it in all directions. This whirlwind was neither preceeded nor followed by any rain. It is also extraordinary that this house alone was affected, and at ten metres distance no disturbance of any kind was experienced."[16]

> "Two men were in a field ... when they heard a sudden report, like that of a cannon. They turned just in time to see a cloud of stones flying upward from a spot in the field. Surprised beyond measure they examined the spot, which was circular and about 16 feet across, but there was no sign of an eruption nor anything to indicate the fall of a heavy body there. The ground was simply swept clean."[17]

4.3.4 Waterspouts (which are vortices forming over water surfaces) frequently exhibit (up to three) very thin outer sheaths which are concentric with the central funnel. These sheaths can ascend and descend about the vortex funnel at will. and they always rotate in sequence (e.g. clockwise then anti-clockwise from funnel to sheath) to maintain the conservation of momentum (which stops the vortex from becoming unstable). All known ringed 'mystery circles' display similar contra-rotations (with the exception of the hoaxed Cheesefoot Head 1986 No 2 formation) and the positioning of these outer rings mirrors the positioning of the outer sheaths described above (see Figure 1 - which has a clockwise swirl in the circle and an anti-clockwise swirl in the ring). The existence of these sheaths was verified by laser probes of waterspouts off the coast of Florida in 1976[18] and, depending on the timing of the sheath's descent, their effects can pass through the outer satellites of the quintuplet formations (see Table 1, and FSR Vol 29 No 1 page 15 and FSR Vol 31, No 5 page 5). These sheaths tend to pulsate rhythmically and this effect results in the wave-like, sinuous pattern found in all the outer rings of the 'mystery circles' :-

> "One (water)spout exhibited a strange pulsating outer sheath of condensation, which rotated around the better-defined inner funnel and then moved upward into the base of the cloud."[19]

> "So far I have described nothing unusual, but the following was quite new to me and seemed of great interest. Surrounding the central core, but separated from it by a clear narrow space, was a sheath, the lower end of which faded away some distance above the water. The profile of this sheath was undulating, it

> being thicker in some places than others. A curious point is that this sheath seemed to pulsate rhythmically, but I could not say whether the appearance of the pulsation might not have been an illusion caused by waves travelling up its outer surface. The pulsation gave an uncanny suggestion of a live thing..."[20]

(see illustration of waterspout from Corliss p 155)

4.3.5 Vortices often form in multiples and can on occasions form in complex geometrical patterns :

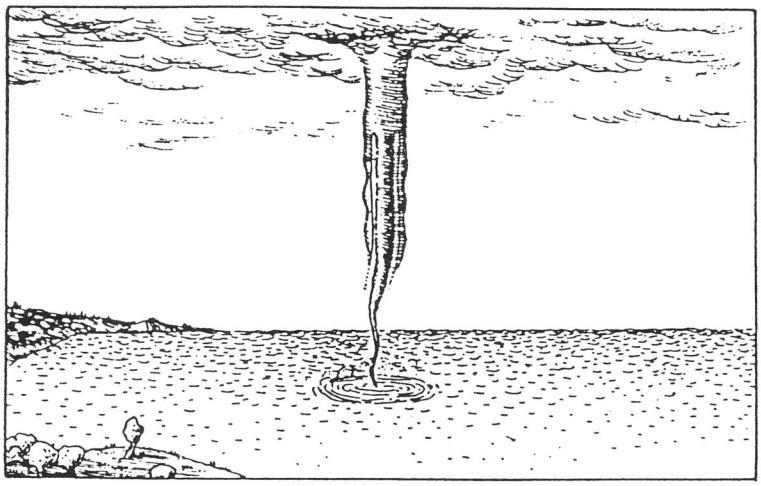
> "What was unusual were the numerous distinct fingers of columns of vapour swirling out of the steam fog layer directly into the overlying cumulus clouds. It is estimated that they were 50-200 metres in diameter, travelled more or less with the wind, and showed a slow but distinct rotation (mostly cyclonic) of up to several rotations per minute. The steam devils tended to be rather short-lived, the longest surviving perhaps for 3 or 4 minutes. An even more interesting view ... was taken from a commercial airliner on January 30th, 1971 ... visible are small cumulus ... plus the steam devils and a highly patterned effect on the surface steam fog. It definitely appears that there were quasi-hexagonal cells elongated along the surface wind direction, the largest steam devils being present at the vertexes of the hexagons."[21]

4.3.6 Contrary to my comment in para 2.5 there seems to be no bias towards clockwise or anti-clockwise swirl patterns within the 'mystery circles'. During 1987 Dr Meaden measured 66 circles (NOT formations), of these 30 exhibited clockwise swirls and 36 exhibited anti-clockwise swirls. Minor vortices do not obey Buy Ballot's Law - which states that (major) vortices in the northern Hemisphere rotate in an anti-clockwise direction - minor vortices rotate in either direction with equal probability.

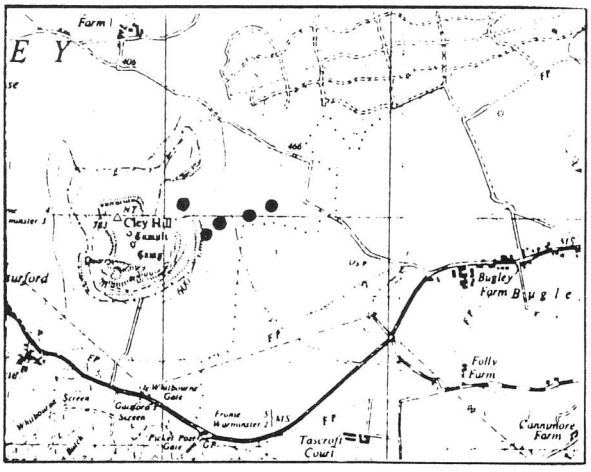
4.3.7 Vortices do not usually rotate at a constant rate, tending instead to fluctuate irregularly according to the supply of inflowing air currents. This fluctuation readily accounts for the 'banding' of the affected crop (2.11) because of the ability of the vortex to displace mature arable crop is clearly proportional to its angular momentum. Any temporary decline in the rate of rotation will result in some of the crop being laid down in bands when it would otherwise continue to be swirled about in a more uniform manner.

4.3.8 These variations of angular momentum of the vortex funnel would clearly force the vortex funnel to migrate about a central point, scouring out a zone that was much larger than the vortex itself (which would tend to become elliptical with repeated movements). A moving vortex clearly accounts for the

Circles cont ...



Example of a Double Walled Waterspout over Lake Victoria
(Taken from Corliss, 1983)



Map showing sites of circles around Cley Hill, 1982-1987.

complex, highly divergent layering (2.12) because the vortex column lays down crop in one direction as it moves about the zone, but then returns in the opposite direction relaying the upper layers of the affected crop in this new, quite different direction. Layering tends to be focused in the centre of the circle where most movement will have taken place, and the final positioning of the spiral centre (which follows the column) must depend upon those chance factors which generate the vortex and its (relatively brief) lifetime (2.4).

4.3.9 The existence of "suction marks" and the suction effects described in para 4.2 clearly accounts for the twisting together of crop stems into knots and intricate patterns that have been noted by several observers.

4.3.10 Air pressure is the only natural force which seems capable of squashing arable crops from above without damaging the heads and stems of the crop itself (para 2.9).

4.3.11 The majority of 'mystery circles' appear close to (or within sight of) steeply inclined hillslopes. 'Trailing Vortices' (e.g. on the Rock of Gibralter) are known to be created by leeside eddies where the wind 'rolls over' as it passes over the top of the slope and sets up 'standing waves' of descending air currents above and beyond the slope itself (perhaps as far as a kilometre or so beyond the hillslope, depending on topography and wind speed). This factor is superbly illustrated by the positioning of the five circles known to have occurred at Cley Hill Warminster between 1982 and 1987 inclusive (see map) All five were formed on the eastern side of this lone hill where the prevailing westerly winds create leeslope eddies. On two occasions the wind direction was known to be from the west at the time of circle formation, thus supporting the leeside hypothesis.[22]

4.3.12 The Vortex Theory of Circle Formation successfully accounts for the lack of suspicious markings (footprints etc) surrounding the genuine circle formations and it makes use of a relatively common mechanism rather than relying upon hypothetical forces or other, unidentified phenomena (e.g. UFOs). Its validity is supported by relatively few eyewitness accounts of vortices creating circles because :-

- many circles appear overnight,

- most circles are discovered in isolated rural locations, and

- most minor vortex events exist for relatively short durations.

There have been four possible eyewitness accounts of vortices creating 'mystery circles', these are :-

a) On 2nd July 1984, Mr Melvyn Bell of Keevil, Wiltshire ... recounted his observation of a whirlwind which he watched flattening wheat

into a circle towards dusk in the summer of 1983. The date was late July or early August, and the place was a dry valley running from west to east on Littleton Down at SZ 9752 which is below Great Cherverill Hill. Mr Bell was horse riding at the time, and stopped when he became aware of a "sort of 'whirlwind'" starting up below him in a field adjacent to the bridle-path. Fifty to sixty metres away he could see dust, dirt and other light debris spiralling into the air, and in a matter of only a few seconds a ten to twelve metre diameter circle was flattened out in the wheat as he watched. At that distance he was not aware of any accompanying noise. The sun was just setting after a good sunny day."[23]

b) "One evening there were about fifty of us sky-watching along the Salisbury Road. Suddenly the grass began to sway before our eyes and laid itself flat in a clockwise spiral, just like the opening of a lady's fan. A perfect circle was completed in less than half a minute, all the time accompanied by a high-pitched humming sound. It was still there the next day."[24] (Note that vortices are often accompanied by humming, buzzing and even screaming sounds, see [25] for some British examples).

c) During 1986 a correspondent wrote to the 'Daily Telegraph' describing his observation of a 'bouncing' whirlwind creating two circles in a cereal field adjacent to his home in the Malvern Hills. Attempts to contact this witness failed.

d) The discoverers of the 1985 Tolymare Farm, Findon quintuplet described how they observed a 'hazy mist' rising up from the central circle in a 'series of fountains'. Compare this account with the following description of steam devils cited by Corliss :-

> "The surface of the lake was covered by vapour caused by the difference in temperature between the cold air and the comparatively warm water. This vapour, white mist, gathered in spots in masses rising higher than the surrounding mist. As these masses of vapour reached a height of some twenty feet they appeared to take on a rotary motion and formed themselves into columns slowly rising until their apexes met the low-lying clouds..."[26]

The Tolymare Farm observation occurred at 04.50 GMT when there may well have been a strong temperature inversion

lying close to the ground. Such conditions are conducive to the condensation of water droplets within a rotating vortex due to reduced air pressure. This circle formation lay 1.7 km SE of a prominent 100 metre high hillslope, and that morning the wind direction was generally from the NW, thus supporting the leeslope hypothesis.

Similar conditions probably resulted in the observations of a Mr Roy Lucas of Yatesbury, Wiltshire at 07.15 GMT on 16th June 1988. On three separate occasions during a period of no more than five minutes Mr Lucas saw a large puff of white 'bonfire smoke' rising to a high of about five metres above the wheatfield. The outer part of this 'smoke' was barely rotating, but the more dense inner core was spinning rapidly. On each occasion the central core of the vortex was visible for only one to two seconds before disappearing, whilst the outer 'smoke' drifted a few yards and dissolved slowly. This smoke cloud was only four to five metres in diameter and its height corresponded with the depth of the inversion layer which is known to have formed that morning due to the clear overnight skies. Wind speed was light and from a north easterly direction. One kilometre to the NE lies Windmill Hill, a thirty metre high obstruction which appears to have been responsible for the creation of these leeslope vortices which were only visible because of the condensation of water droplets within the vortex.

Later that same morning, two circles were discovered in a barley field only two hundred metres to the west, provoking Mr Lucas to report that "After seeing what I saw I am quite convinced that this is what caused the circles."[27]

It is hoped that further eyewitness accounts of vortices creating circles or forming close to newly discovered circles will be produced by appeals to be made in the agricultural press. These accounts will be carried in full by JTAP.

Clearly an abundance of evidence exists which supports the Vortex Theory of Circle Formation. In the next issue of JTAP I will describe the BUFORA/TORRO sample survey and the valuable information this produced.

REFERENCES

1. (Missed from first part of article) 'Mystery of the Circles' BUFORA 1986

2. See 'The Classification of Whirlwind Types and a Discussion of Their Physical Origins', The Journal of Meteorology, Vol 10, Number 100, pp 194-202 (July/August 1985)

3. See Ingrid Holford's 'The Guinness Book of Weather Facts and Feats' (1977) Chapter 15, pp 194-195 for accounts of tornadic disasters killing hundreds of people and causing widespread damage.

4. Holdford (1977) for accounts of vortices

Circles cont ...

References cont ...

lifting 83 ton railway coaches (with 117 passengers) 80 feet into the air, moving a 90 ton locomotive 150 feet along a track (in Britain!) and for accounts of vortices travelling 300 miles and lasting for 7 hours.

5. See J. Met Vol 10, Number 100 'Britain's Greatest Tornadoes and Tornado Outbreaks' Mike Rowe pp 212-220 for maps and examples; also 'Weather' Vol 39 (1984)

6. See Holford (1977) page 194 and page 198

7. See Holford (1977) pp 191-192

8. See Singer, S. (1971) 'The Nature of Ball Lightning' Plenum Press, New York and London

9. Corliss, W.R. (1983) 'Tornados, Dark Days, Anomalous Precipitation and Related Weather Phenomena' The Sourcebook Project, pages 158, 152 148-149;

see also: Holford (1977) pages 191-192 and 200.

10. See Corliss (1983) pp 167-168

11. See Corliss (1983) pp 158-159

12. See Corliss (1983) pp 158-159

13. See Corliss (1983) page 173

14. Holford (1977) page 193

15. Corliss (1983) page 169

16. Corliss (1983) page 167

17. See Corliss (1983) pp 167-168

18. Corliss (1983) page 156

19. See Holford (1977) pp 198-199

20. See Corliss (1983) page 155

21. See Corliss (1983) pp 170-171

22. See 'The Journal of Meteorology' "The Mystery of Spiral-Circle Ground Patterns in Crops Made by a Natural Atmospheric-Vortex Phenomenon" by G.T.Meaden, Vol 13, No129 (May/June 1988) pp 209-210

23. See J.Met 'Advances in the Understanding of Whirlwind Spiral Patterns in Cereal Fields' by G.T.Meaden, Vol 10 Number 97 (March 1985) pp 77-78

24. See J.Met 'Whirlwind Spirals in Cereal Fields : The Quintuplet Formations of 1983' by G.T.Meaden, Vol 9, No. 89 (May/June 1984) page 141

25. See ref 2 ibid page 207 for sounds attributed to British vortex events

26. See Corliss (1983) page 170

27. To be published in J.Met Vol 13 (1988)

I.C.U.R. CONGRESS '89.

FIFTH LONDON INTERNATIONAL UFO CONGRESS.

14th to 16th JULY 1989.

Further to the preliminary announcement in the March 1988 issue of JTAP we can now confirm that the Fifth London International UFO Congress will be held at the London Business School, Regent's Park, London NW1, United Kingdom on Friday 14th to Sunday 16th of July 1989. The Congress will follow a similar format to the very successful 1987 Congress held at the same venue.

The Congress is being organised by the International Committee for UFO Research (ICUR) with assistance from it's member organisations.

It is too early to announce a full list of speakers or the complete programme. The preliminary list of speakers includes Walter Andrus (International Director of MUFON), Bertil Kuhlemann (Past Chairman of ICUR) and Cynthia Hind (MUFON Director for Africa). It is hoped that the Congress will be opened by the BUFORA President, Major Sir Patrick Wall. A number of other well known speakers have been invited, we hope to bring you more informationin the March 1989 JTAP.

If you would like further details, or to reserve your place write (enclose S.A.E. please) to :

I.C.U.R. Congress '89,
P.O. Box 314,
Penn,
High Wycombe,
Buckinghamshire,
HP 10 8 PB,
UNITED KINGDOM.

(PLEASE NOTE: This event is organised by ICUR and is entirely independent from the London Business School. All enquiries should be sent directly to ICUR at the address above. The information in this announcement is preliminary and may be subject to alteration)

AIRSHIP MYSTERY SOLVED!

The previous edition of JTAP carried an article on the above subject, which was an extract from the Northamptonshire UFO Centre Newsletter. There were a large number of reports of this object,most of which were not mentioned in the JTAP article. In the extract I failed to mention that these investigations were carried out by Ernest Still (AI), Susan Pollock (AI), Ray Shaw, Paul Edwards, Harry Williams and Bedford AI David Pearson. Special mention should be made of David Pearson who did much of the follow up work with Airship Industries. ED.

PROPOSAL FOR THE CREATION OF AN INTEGRATED GLOBAL NETWORK OF UFO OBSERVATORIES

T.R.DUTTON

(This paper was originally presented at the Fourth London International UFO Congress. This meeting was held between 10th and 12th July 1988).

BIOGRAPHICAL NOTE

T.R. (Roy) Dutton, CEng, MRAeS, MIMech, is an aeronautical engineer working within the British aerospace industry.

During the period of intense UFO activity reported during 1967, curiosity led him to begin analysing selected reports. The results obtained then were so challenging that his pastime soon became a serious spare-time study, which was to hold his attention for the next twenty years (at least).

A member of BUFORA since 1973, Roy was also associated with DIGAP (Manchester) during the early 1970's. He presented papers at two BUFORA National Conferences and at a Kensington lecture in 1979. A full presentation of his work, which culminated in the formulation of an orbital theory, was delivered at the 2nd May 1987 BUFORA Lecture held at the London Business School.

An extensive account of Roy's orbital theory was carried in a previous edition of JTAP (September 1986).

SUMMARY

It is claimed that the Extra-Terrestrial Hypothesis (ETH) has now been replaced by a verifiable theory.

The outcome of twenty year's research, Dutton's Orbital Theory links Close Encounter activity with the behaviour of extremely artificial Earth-satellites which, for short periods of only a few hours, circulate round the planet with orbital periods of 65 minutes in retrograde motion.

The paper begins with a summary of the main features of the Orbital Theory and an explanation of its practical consequences, emphasising that the theory can be tested both by synthesis of reports data and by direct observations.

It is then proposed that the creation of an integrated network of dedicated observatories will be necessary to test the indications of the theory adequately. After an explanation of this proposal, the foreseen operational duties and minimum staffing levels for each observatory are put forward for consideration.

Global Observatories cont....

1. INTRODUCTION

For the benefit of those who were unable to be present at my BUFORA lecture in May 1987, when I gave a full account of my orbital theory for Close Encounters, I must begin by summarising the main features of the theory. My work now needs testing, either by someone doing a similar synthesis of the data or by constant monitoring of CE events and direct observations of the skies. On this occasion I want to concentrate attention on the second alternative : but, first I must provide the necessary background information.

2. ORBITAL THEORY

Analysis of vehicular objects associated with CE events led me to the view that most of these could be regarded as advanced technology versions of the Lunar Excursion Modules (LEMs) used to transfer American astronauts from the orbiting Command Module to and from the surface of the Moon during the Apollo missions; except, of course, the UFOs would be terrestrial equivalents, i.e. Terrestrial Excursion Modules (TEMs). Being generally unaerodynamic, I reasoned these objects would not be able to stray far from the track of the orbiter which had spawned them on any given occasion; therefore, by linking CE events in meaningful astronautical ways, I tried to define the tracks of the mothership spacevehicles. Much to my delight and amazement, the work produced positive results, which I will now describe.

It would appear that I have discovered that a network of such tracks covers all the inhabited regions of the world. They are generated in a retrograde sense (i.e. from East to West) from 66 equally-spaced generators on the Equator by either super-satellites or direct incursion vehicles from space. In any case, the transit speed of 24500 mph (39400 km/hr) is approximately escape velocity. This means that any such continuously-orbiting satellite would have to hold itself in orbit by creating, artificially, an acceleration towards the centre of the Earth of about $0.8g_o$. In terms of our technology, this would mean burning a large rocket motor continuously, a process that would be wildly extravagant with the precious fuel, even for a single orbit.

Such technology is, clearly, not of this world; especially as the events considered for the exercise were recorded over a period of over 100 years!

Upon these findings and supporting evidence rests my case in favour of the ETH. Indeed I believe that I may have produced the only comprehensive Extraterrestrial Theory which is based upon physical maxims and, therefore, may be tested by others.

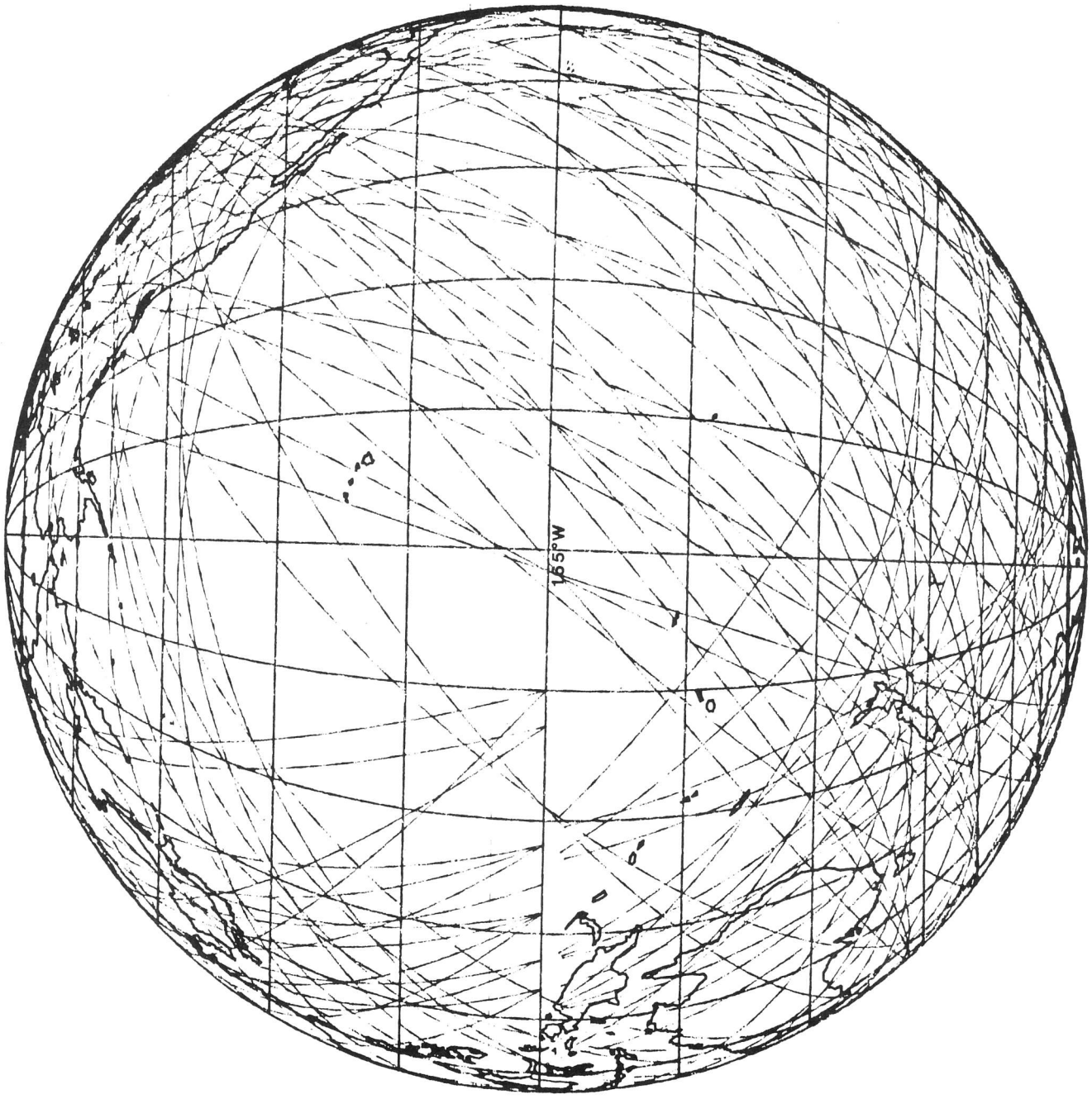
FIGURES 1,2,3,4,5.

These five views of the world show 66 tracks which were identified as relating to 435 selected events and from which the existence of others can be inferred. Notice how

FIGURE 1.
Orbital Tracks

Global Observatories cont ...

FIGURE 2.
Orbital Tracks



Global Observatories cont ...

FIGURE 3.
Orbital Tracks

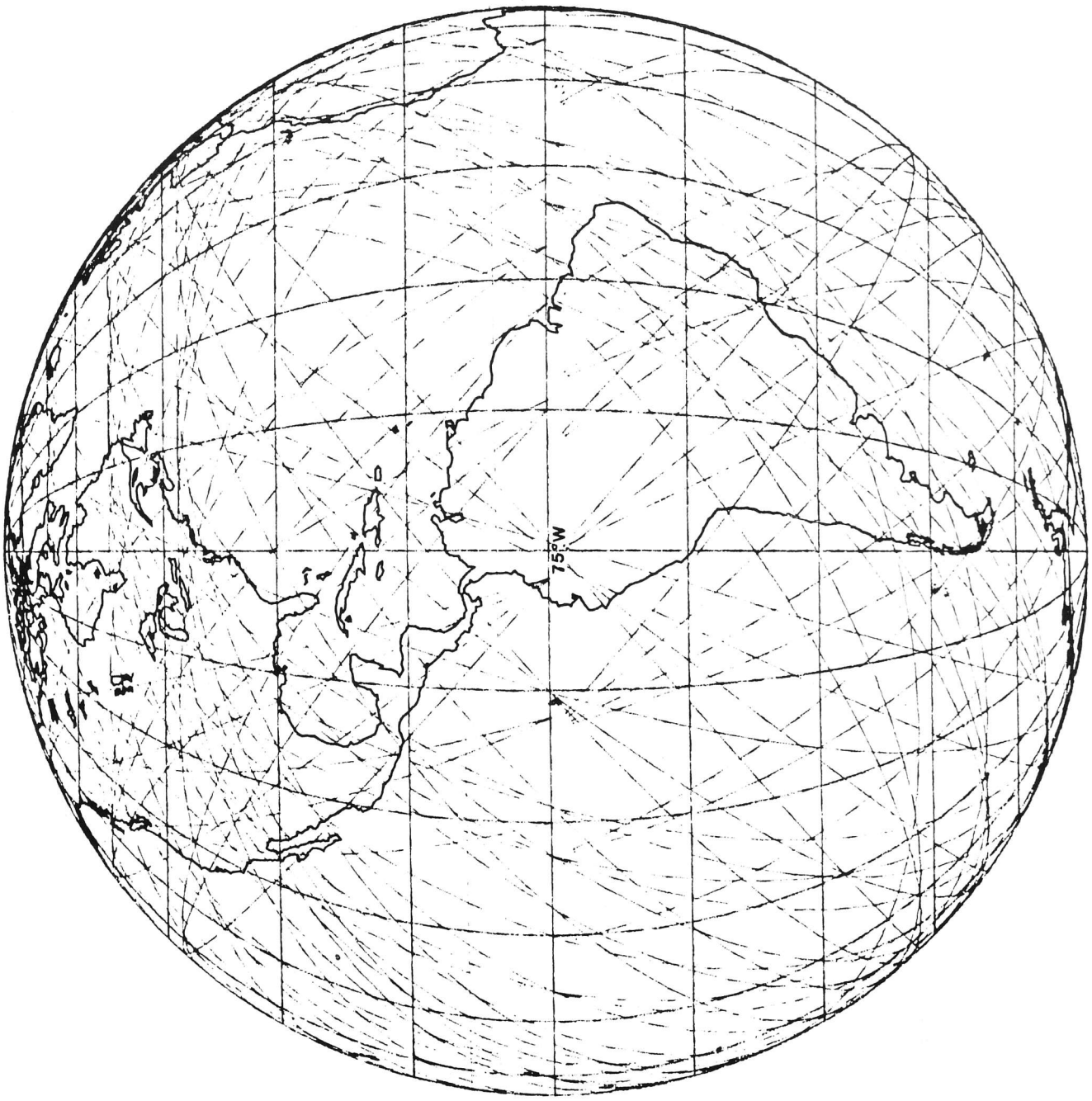
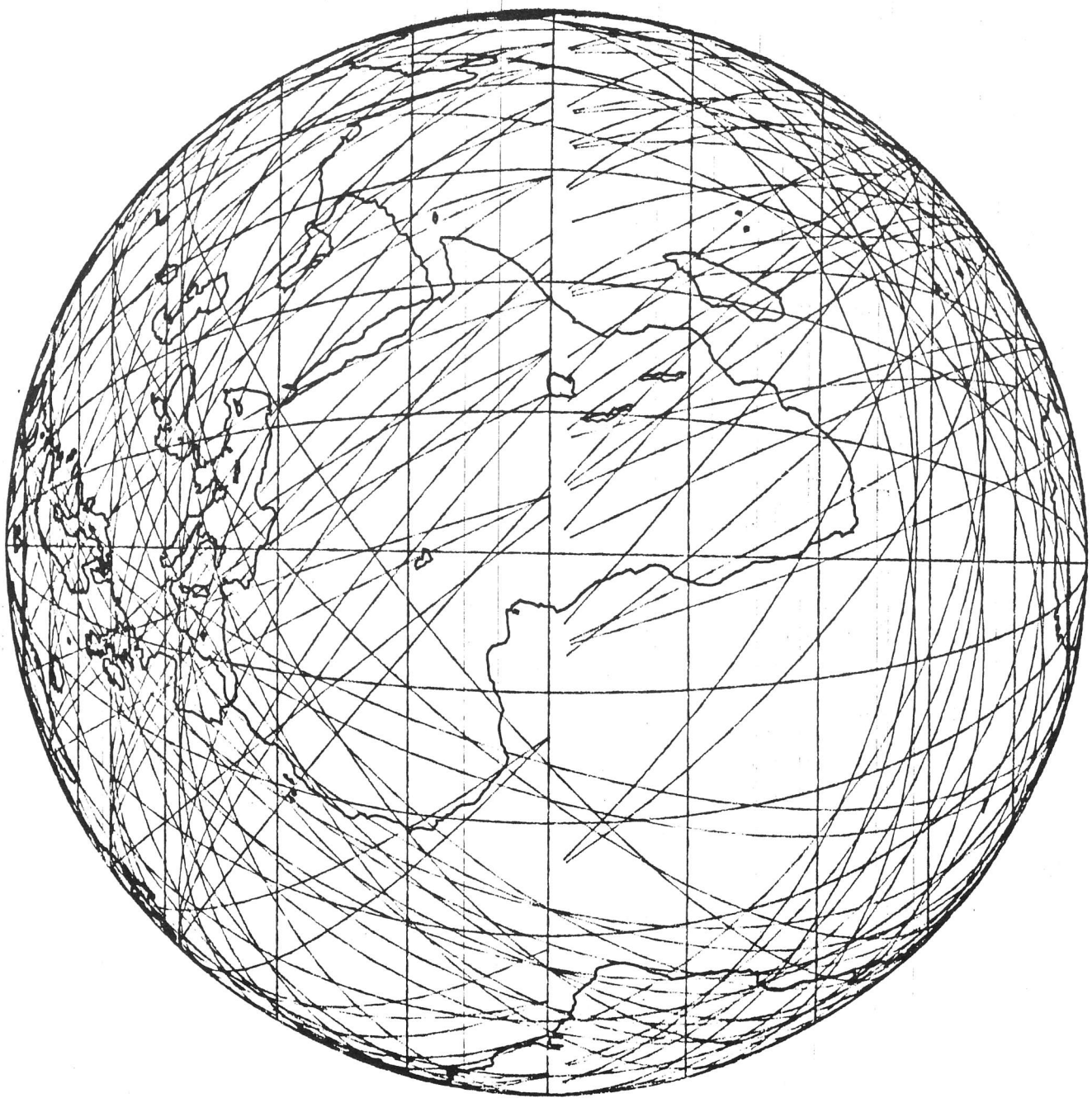
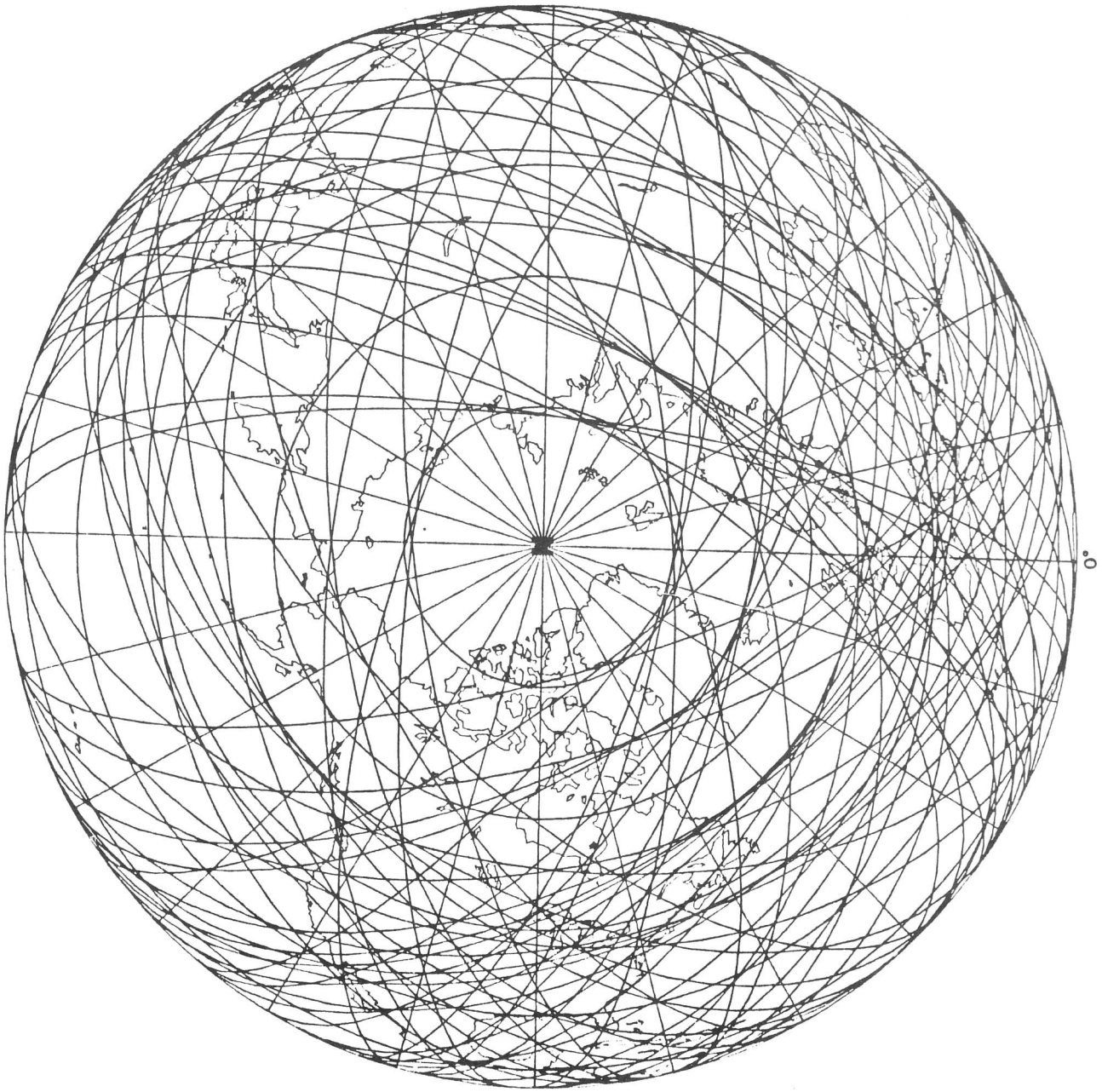


FIGURE 4.
Orbital Tracks



Global Observatories cont ...

FIGURE 5.
Orbital Tracks



the end of one revolution on one track can sometimes lead onto a second orbit at the same or (if desired) another angle of inclination to the Equator. From such observations, three distinct continuous orbit sequence options came to be identified, creating 66 generator points on the Equator, as mentioned earlier. These generators were spaced more or less at equal spacings. If one now combines this discovery with the identification of at least eight distinct orbit inclinations, one is led to conclude that at least 66 x 8 = 528 tracks are available for the use by the alien astronauts.

This arrangement offers great flexibility of action for the operators, enabling them to cover many areas of interest in the time for one orbit round the world (65.4 minutes).

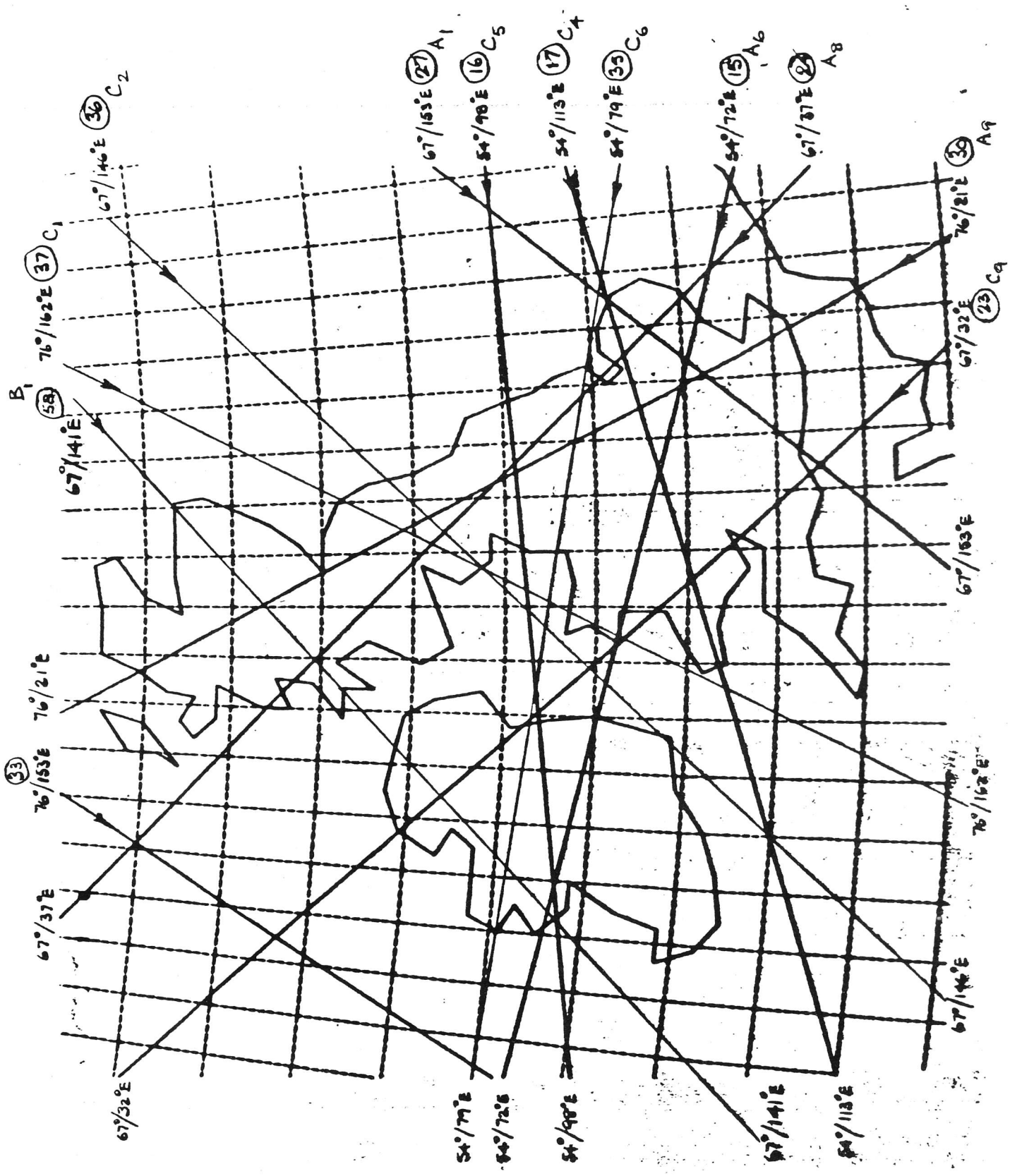
FIGURE 6.

Let us examine some of the options by zooming-in on Britain. As an example, let us consider that an alien spaceship is passing over Britain on Track 17, which is inclined at 54^{o} and in orbit sequence 'C' and deposits a scout vehicle (TEM) during its east to west transit over East Anglia. During the time taken for the mothership to complete one orbit of the world, the globe will rotate 16.4^{o} eastwards beneath it, so that on its subsequent pass over Britain it will be travelling along Track 16, if the 54^{o} inclination angle is maintained. However, the next orbit of the Earth will once again bring it close to Norfolk, this time on Track 35, and close to the area in which the TEM is now hiding, (perhaps in a wood or underwater) and awaiting a predetermined rendezvous. In another situation, it is conceivable that the scout could be left to its own devices to nosy about for a period of several hours before retrieval occurs.

As pointed out earlier, my discoveries were based on the premise that the sites of landings or other Close Encounters would not be very far removed from the tracks of the mothership spacecraft; however, it is conceivable that a TEM might have to travel at low-level and in a clandestine manner over distances of, say, 60 nautical miles (1^{o} of surface arc) to its arranged rendezvous location. For this reason, some TEMs are more aerodynamic than others. They are all 'stealthy' (to use the latest military terminology), in that they generally fly close to the ground, in radar clutter, and appear to have low radar reflectivity except when they wish to create mystifying decoys, such as insubstantial plasma-balls.

Another tactic available to the operators is to divide the primary space vehicle into a number of motherships at any

FIGURE 6.
Orbital Tracks Across Britain



equatorial generator point, so that each takes a separate path over the Earth's surface during the next orbital period: and each has the option of adding TEM activity to high-altitude surveillance. Such a tactic would provide maximum coverage in minimum real-time; but, on Earth, UFO sightings would be generated at all times of the day and night during the time for one orbit of the globe.

It would also seem to have been substantiated by eye-witnesses that the mother vehicles are capable of stopping abruptly whilst in orbit and the accelerating up to orbital speed again, sometimes on a totally different track. My studies suggest that these sudden changes of direction may occur at track intersections.

Communications between the alien vehicles may be by means of laser devices, as indicated by some reports. (Perhaps someone ought to tell Carl Sagan and the SETI people ---- they could be searching for signals in the wrong region of the electromagnetic spectrum!)

The trajectories related to the geographical traces already described seem to favour certain orientations relative to the stars.

FIGURE 7

This histogram shows how a limited study indicated the presence of these orientations. They are given in terms of right Ascension at the point of Maximum +ve Declination on each of the possible tracks related to the location of each sighting in the sample. Peaks indicate the favoured orientations. We will now examine how these are located against the starfield:

FIGURE 8

Sightings of the Close Encounter variety tend to occur between the two tracks drawn at 1950 hours RA, seen on the extreme left, and the Milky Way; or, more explicitly, they are associated with tracks within that range of orientations. But there is another, smaller, range of orientations between 1100 and 1300 hours RA, represented by two rather interesting tracks with 67^{o} and 76^{o}n inclinations. The former passes through Sirius; the latter, close to Reticulum!

That, I think, must suffice as a summary of my findings. Time will not permit me to elaborate on the methods used to obtain them; but if anyone would like to know more, perhaps question time will provide an opportunity for further explanations.

FIGURE 9

To aid your memory, this is a list of the main features of my theory, some of which have not been mentioned in my description because they are incidental to orbital theory structure.

FIGURE 7.

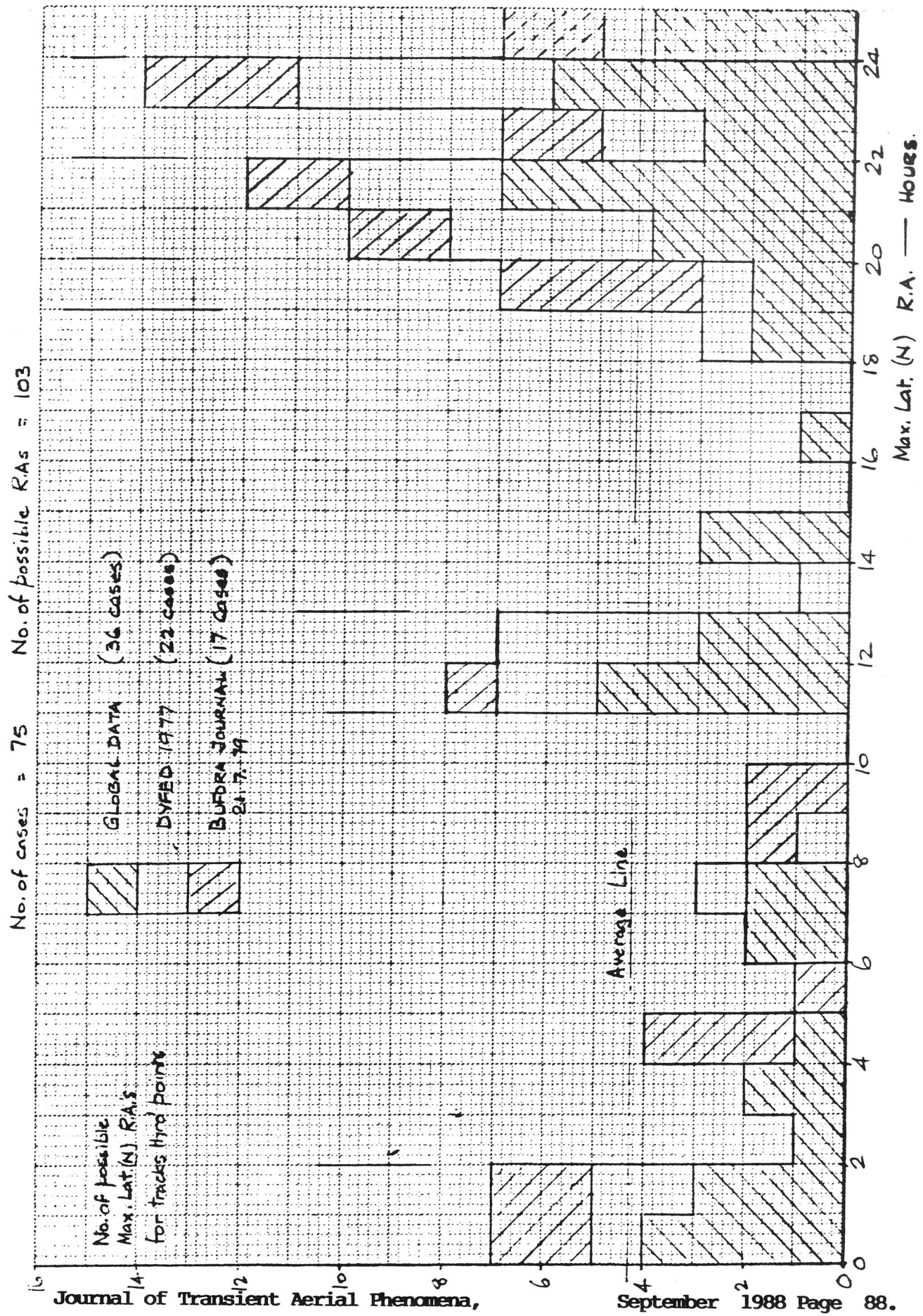

No. of cases = 75
No. of possible RAs = 103
GLOBAL DATA (36 cases)
DYFED 1977 (22 cases)
BUFORA JOURNAL (17 cases) 21.7.79
No. of possible Max. Lat (N) R.A.s for tracks hind points
Average Line
Max. Lat. (N) R.A. — HOURS.
0
2
4
6
8
10
12
14
16
18
20
22
24

FIGURE 8.

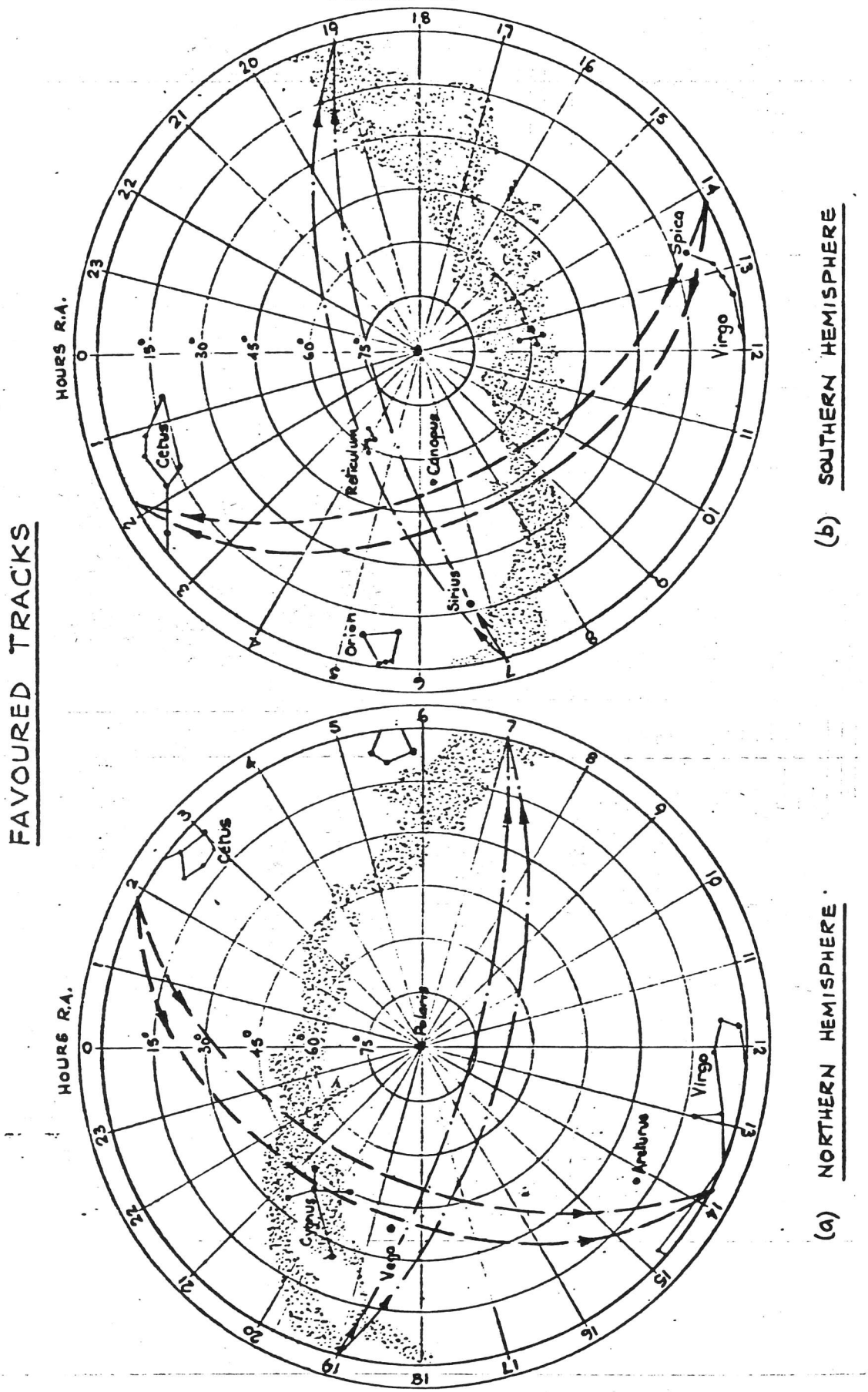

FAVOURED TRACKS
HOURS R.A.
Cetus
Orion
Sirius
Canopus
Reticulum
Spica
Virgo
(b) SOUTHERN HEMISPHERE
HOURS R.A.
Cetus
Polaris
Cygnus
Vega
Arcturus
Virgo
(a) NORTHERN HEMISPHERE.

FIGURE 9.
MAIN FEATURES OF THE ORBITAL THEORY FOR CLOSE ENCOUNTERS.

* SUPER-ORBITAL TRACK NETWORK

* HYPOTHETICAL SPACECRAFT IN RETROGRADE MOTION

* CLOSE ENCOUNTERS OCCUR UNDER TRACKS

* FIREBALLS ARE CREATED BY ATMOSPHERIC-ENTRY VEHICLES

* ATMOSPHERIC VEHICLES HAVE DIRECTIONAL FREEDOM

* TRACK INTERSECTIONS ARE FAVOURED FOR CLOSE ENCOUNTERS

* SITES WITH HISTORICAL CONNECTIONS ARE FAVOURED

* LIMITED SURVEILLANCE TIME PERIODS IN ANY 24-HOUR PERIOD

* PRE-DETERMINED DELIVERY AND RENDEZVOUS TIMES

* SPECIALISED AND 'STEALTHY' SCOUT CRAFT DEPLOYED

* QUANTUM-MECHANICAL PROPULSION SYSTEMS FOR VEHICLES

* HIGH-'g' NEAR-VERTICAL DEPARTURES PRIOR TO RENDEZVOUS WITH ORBITING SPACECRAFT

3. PROPOSAL

The main features of my theory can be tested by observation. That is why I am now calling for the creation of properly equipped observatories, staffed by experienced and scientifically qualified people who, presumably, will know whenever any of the predicted facets of the phenomenon manifest themselves. Obviously, if we are to monitor the progress of a super-satellite object in retrograde motion, for example, the proposed observatories must be linked by telephone, telex, radio and other means. The expert use of computers will also be essential in the task of proving (or disproving) the findings.

During the past twenty years I have devised prototype methods for analysing UFO data. These could be used initially, until better methods are evolved. My next diagram was created to enable anyone to determine which of the predicted tracks passed over or close to a given location, and serves to illustrate the principles involved in the prediction of the expected directions of travel for the super-satellite objects, or in the positive identification of an observed object as an alien vehicle.

FIGURE 10

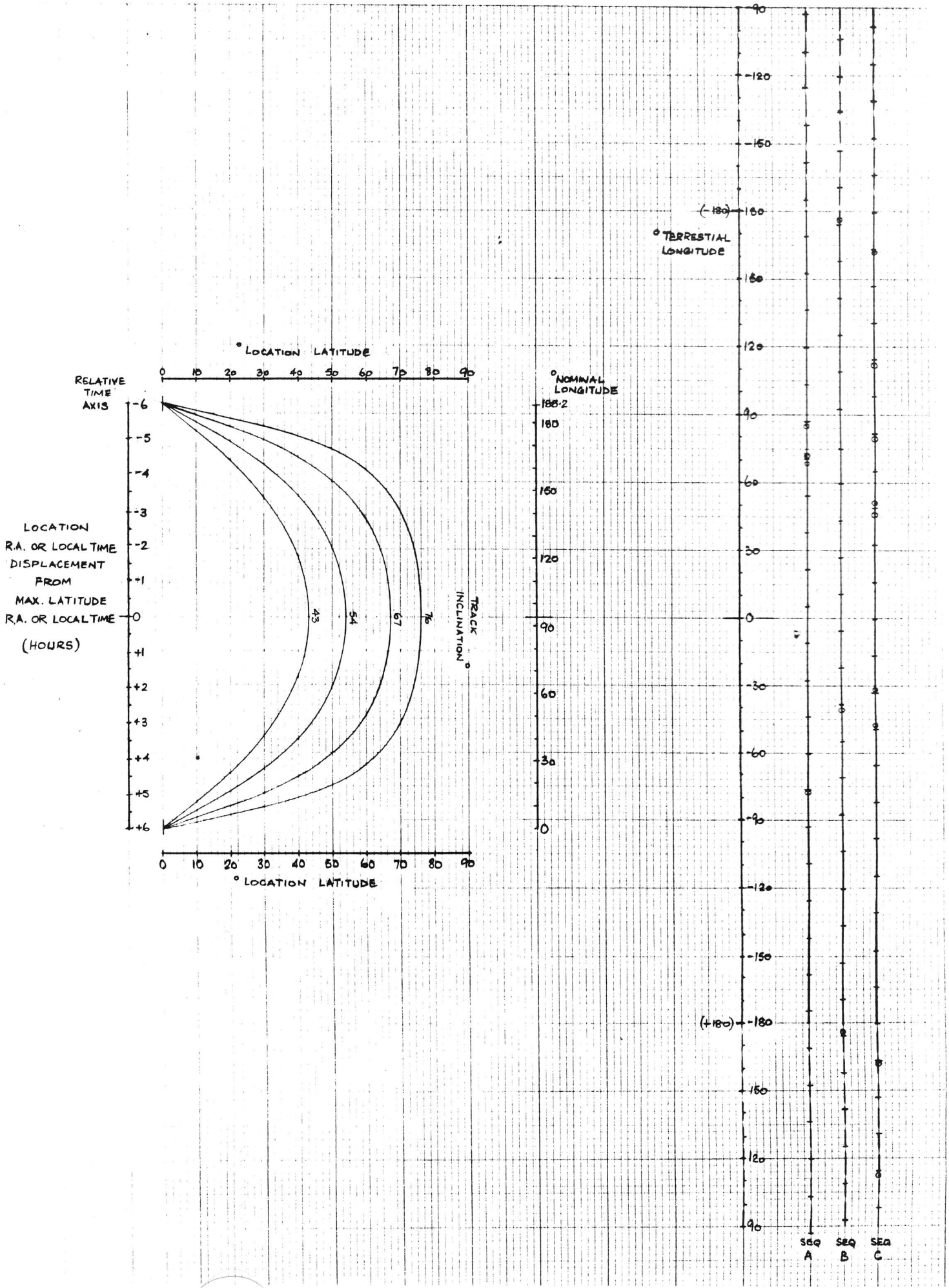
As with the global track plots, only four of the eight identified track inclinations have been drawn in, in order to avoid confusion. Briefly, one draws a line vertically on the left hand graph at the latitude of the location of interest. From each of the intersections of this line with the track-line profiles, lines are now drawn horizontally to intersect with the Nominal Longitude axis. For locations in the northern hemisphere, a line is now drawn from 0^{o} Nominal Longitude to the Terrestrial Longitude of the location being examined. Similar, parallel, lines are the drawn for each of the track intersection points, the Terrestrial Longitude intersection points being then compared with the equatorial generator points of Sequences A,B and C given at the right-hand edge of the graph. Any coincidences observed imply track possibilities through the location being investigated. Of course, this process could be easily modelled by computer and the task of track recognition would then be expedited.

The tasks of each observatory would include :

1) Regular nightly observations of the sky, by use of visual and other means;

2) Receipt and computerisation of reports submitted by members of the public, police and armed services, and to co-ordinate investigation of such incidents, as soon as they are reported.

FIGURE 10.


° LOCATION LATITUDE
0 10 20 30 40 50 60 70 80 90
RELATIVE TIME AXIS
-6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6
LOCATION R.A. OR LOCAL TIME DISPLACEMENT FROM MAX. LATITUDE R.A. OR LOCAL TIME (HOURS)
43
54
67
76
TRACK INCLINATION °
° NOMINAL LONGITUDE
180·2 180 150 120 90 60 30 0
° TERRESTIAL LONGITUDE
90 120 150 (-180) 180 150 120 90 60 30 0 -30 -60 -90 -120 -150 (+180) -180 150 120 90
SEQ A
SEQ B
SEQ C

Global Observatories cont ....

Investigation would amount to :

a) immediate comparison of the incident's location with the proposed track network, and

b) in-the-field interrogation of witnesses and inspection of the sites of Close Encounters;

3) Immediate communication of an occurrence to the nearest neighbouring observatories, beginning with those lying to the West and closest to the observed or anticipated track of the unidentified object or of its mothership;

4) Reception and transmission of reports from other observatories and to process these immediately by computer, with the purpose of predicting where and when the next events may occur.

FIGURE 11

This diagram illustrates the principle just described. The process of receipt of information and re-transmission must occur quickly, in a matter of minutes, to be effective. Remember that the alien spacecraft in orbit will be making rapid progress westwards and covering 400 nautical miles every minute !

It seems to me that the minimum number of personnel required to staff an observatory effectively at any time is, probably, seven, their functions being :

Experienced observers	2
Computer analyst/operator	1
Investigator (internal)	1
Investigator (external)	1
Communicator (reception)	1
Communicator (transmission)	1

4. CONCLUSION

If we are to match the wits of those who weave the tangled web, we must act as proficiently as they appear to do. The task is probably more difficult than NATO's task of monitoring spy satellites. Indeed, in the Northern Hemisphere at least, NATO's network would be ideal for the proposed task, except that everything then would be hidden under a veil of military secrecy, if that were to be the only network monitoring UFO events. That is why the creation of a civilian network is so essential. UFO's of the truly unidentifiable kind may not present any defence threat but they surely threaten all our preconceptions about our history and our destiny.

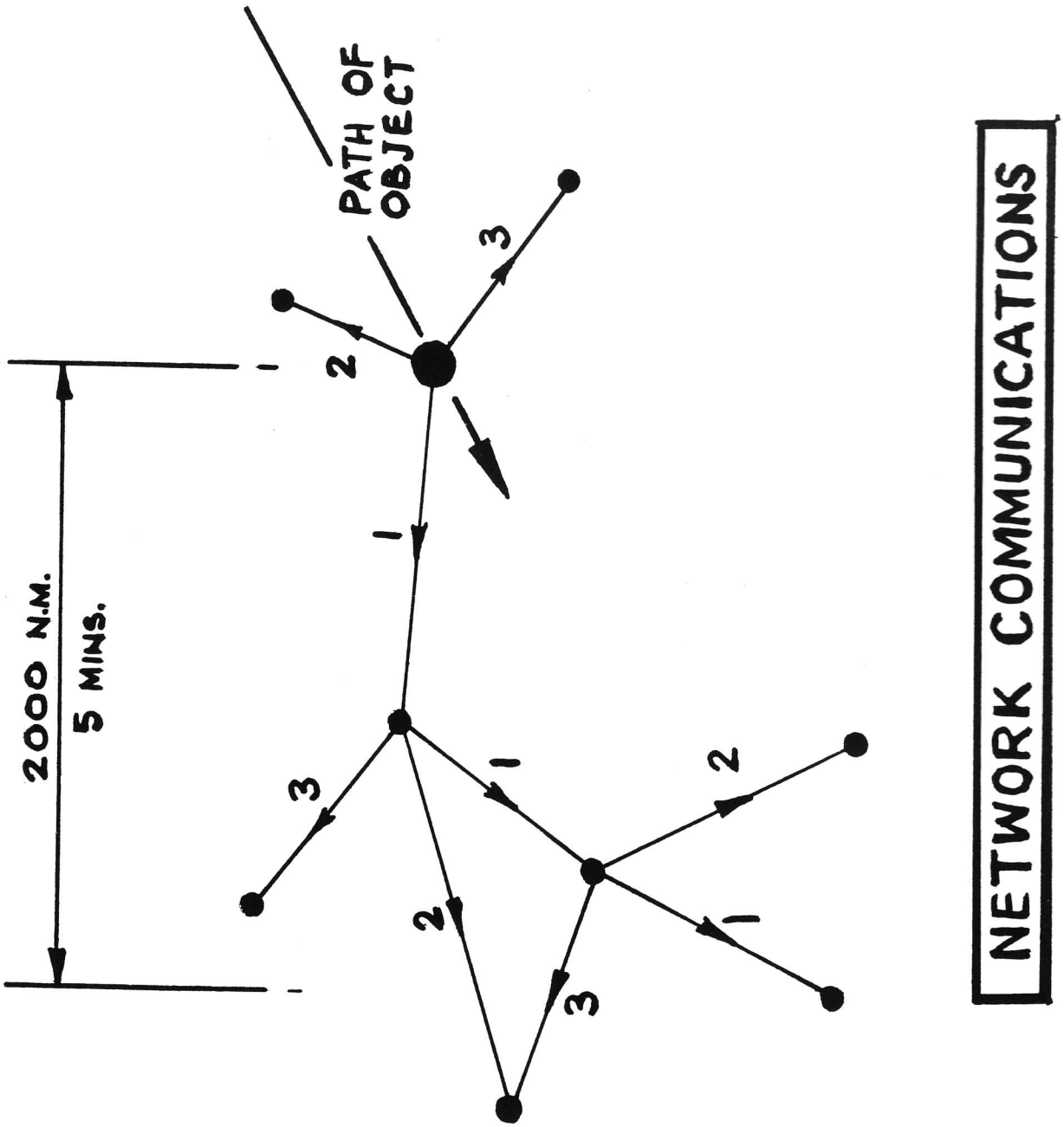
I believe that this enterprise could turn out to be the most exciting and rewarding scientific quest of all time. Who is going to be prepared to take up the challenge ? Which groups, which universities, which governments are going to be prepared to put my observations to the test ?

Perhaps the answer to that question will become clearer during this Congress. Having lived alone in this knowledge for so long, I most sincerely hope so !

Thank you.

Global Observatories cont ...

FIGURE 11.



CORRESPONDENCE

THE TODMORDEN UFO EXPLAINED - REPLY TO CORRESPONDENCE - JTAP, MARCH 1988.

To Editor, J.TAP:

Jenny Randles defends her interpretation of the Godfrey Case by reference to pp 150-151 of The Penine UFO Mystery. But that is part of the transcript of a hypnosis session and no-one should rely on the statements made by a hypnotized witness.

I prefer Randles's own account in chapter 10. On page 126 she tells us that six weeks afterwards Godfrey had 'forgotten' that he had turned the car around (i.e. he did not recall doing so). He thought he had driven straight towards the police station after the incident. This indicates that he did see the object in an ESE direction. Why was he so unclear as to whether or not he had turned the car around?

On the same page we learn that, after a brief period of disorientation, Godfrey found himself 'a hundred yards or so further down the road' (my emphasis). Since the road falls towards the police station this statement also indicates that he was headed ESE not WSW.

I propose that Godfrey did indeed turn right into Ferney Lea Road and that he later emerged onto the Burnley Road further to the NW. He then turned left towards Todmorden and saw the mirage of Venus. It is understandable that he cannot recall all this precisely. My scenario would also explain what he was doing between leaving the police station at 5.05 and returning at 5.30 am. Randles's scenario does not explain this discrepancy.

As to photographs, Randles did not even publish a photograph looking WNW up Burnley Road, the direction in which she claims Godfrey saw the object. The extent to which buildings obstruct the ESE horizon has yet to be established. Randles's caption to the photograph taken in Burnley Road (which carries no credit) states that he is standing 'on the exact spot ... where he underwent his dramatic close encounter...' Are we now to understand that this statement is untrue? Randles's arguments on this matter are specious; there was nothing to prevent her taking the photograph in the opposite direction.

Randles's objections to my article reveal (among other things) her misunderstanding of the scientific method. Truth is not certainly known; guesses have to be made as to what it is. These guesses are formulated as hypotheses and my article contained such a hypothesis. Randles claims that Godfrey 'WAS positively driving north-west...', but she cannot know this for certain (although she may build a hypothesis around that assumption). Hypotheses are judged on their probability of being correct. I propose that it is more probable that Godfrey saw a mirage of Venus than that he saw an alien spacecraft (if that is what Randles proposes).

Correspondence cont ...

I do not know what my status in BUFORA has to do with this debate but since Randles mentions it I feel obliged to comment. Are the views of AIs worth more than those of non-AIs? Are my views worth less because I am no longer an AI? I had not been told that my AI status was withdrawn because I was 'continually upsetting witnesses' and I am not aware of doing so. If such accusations were made I should like to hear them. One Scottish witness refused to accept my explanation and complained to Randles. I did not attack Betty Cash and did not accuse her of fraud (if MUFON were not pleased why did they publish my comments and Cash's response?).

Hilary Evans must (sic) know that I do have doubts; certainty is not an option. My use of the word 'must' is clearly deductive, resulting from prior conditions which allowed of only one explanation (within my hypothesis). I did not set out to 'prove' anything. Evans's understanding of the scientific method seems to be as poor as Randles's.

Yours faithfully,

Steuart Campbell,

Edinburgh.
1988 Jul 24.

(Thank you Steuart for your further comments. Jenny is, of course, welcomed to respond to any of Steuart's points.

In Jenny's defence I should point out that it is often necessary to leave out of books many of the details that would appear in a full case report. Authors are frequently required to trim both the text and the number of plates to suit what a publisher is able/willing to produce rather than what the author/researcher feels necessary to make their case.

Steuart has also pointed out that I had not applied the 50% rule to Jenny Randles reply which was of similar length to the text of his original article. For his reply Steuart has kept to 600 words [i.e. 50%], therefore any further correspondence should be limited to 300 words. ED.)

BUFORA PUBLICATIONS :

For details of BUFORA Publications, membership forms and meeting programmes please send a stamped addressed envelope to :

BUFORA
16, Southway
Burgess Hill
Sussex, RH15 9ST.

BUFORA publications include

PHENOMENON

Edited by John Spencer and Hilary Evans.

Following on from 'UFOs 1947-87' (copies still available), PHENOMENON is a comprehensive and global overview of the last 40 years of serious research and study written by experts from all over the world, including sections by Budd Hopkins, Cynthia Hind, Maurizio Verga, Dennis Stacy & Jenny Randles.

(PHENOMENON is published by Macdonald/Futura books)

Aims and scope of the Journal

Research and investigation into unidentified flying object (UFO) phenomena has progressed from the early days of wild speculation into an area where scientific analysis and evaluation methods can be applied to a number of specified areas.

It is realised that ufological research is subject to a great deal of speculative comment, much of which lies on the boundaries of current scientific thought. Many existing scientific institutions accept limited discussion of UFOs and related phenomena where it has some bearing on their discipline. The Journal of Transient Aerial Phenomena (Journal TAP) offers a forum for scientists and researchers to present ideas for further discussion, results of investigations and analysis of statistics and other pertinent information.

Journal TAP aims to meet a wide range of discussion by incorporating an approach with breadth of scope, clear and topical comment conducted with scientific rigour. It intends to offer a truly international forum enabling researchers throughout the world to publish results in an authoritative publication which should serve to further knowledge of the cosmos and benefit mankind in so doing.

Notes for contributors

The Editorial Board will be pleased to receive contributions from all parts of the world. Manuscripts, preferably in English, should be submitted in the first instance, to the Editor-in-chief, 40 Jones Drove, Whittlesey, Peterborough, PE7 1UE, United Kingdom.

Manuscripts should be typed double-spaced on one side of A4 size paper with wide margins and submitted in duplicate. While no maximum length of contributions is prescribed, authors are encouraged to write concisely.

The author's name should be typed on the line below the title. The affiliation (if any) and address should follow on the next line. The body of the manuscript should be preceded by an abstract of around 100 words giving the main conclusions drawn.

All mathematical symbols may be either hand-written or typewritten, but no ambiguities should arise.

Illustrations should be restricted to the minimum necessary. They should accompany the script and should be included in manuscript pages. Line drawings should include all relevant details and should be drawn in black ink on plain white drawing paper. Good photoprints are acceptable but blueprints or dyeline prints cannot be used. Drawings and diagrams should allow for a 20 per cent reduction. Lettering should be clear, open, and sufficiently large to permit the necessary reduction of size for publication. Photographs should be sent as glossy prints, preferably full or half plate size. Captions to any submitted photograph or illustration should be appended and clearly marked.

In the interests of economy and to reduce errors, tables will, where possible, be reproduced by photo-offset using the author's typed manuscript. Tables should therefore be submitted in a form suitable for direct reproduction. Page size used should be A4 and width of table should be either 10.5 cm or 22 cm. Large or long tables should be typed on continuing sheets but identifying numbers should be placed on the upper right-hand corner of each sheet of tabular material.

Reference to published literature should be quoted in the text in brackets and grouped together at the end of the paper in numerical order. A separate sheet of paper should be used. Double spacing must be used throughout. Journal TAP references should be arranged thus :

(1) Jacques Vallee: 1965. *Anatomy of a Phenomenon*, vii, Henry Regnery, Chicago.

(2) David Haisell: 1980. Working Party Report, *Journal TAP* 1/2, pp36-40

With the exception of dates which should be presented in the astronomical convention viz : 1977 August 06, no rigid rules concerning notation or abbreviation need be observed by authors, but each paper should be self-consistent as to symbols and units, which should all be properly defined. Times however should be presented in astronomical form using the 24 hour clock and Universal Time (UT) where possible. If local time is used, this should be specified viz 19h 15 GMT.

The Editorial Board shall have the right to seek advice from referees on suitability for publication and may, on their recommendation, accept, seek revision of or reject manuscripts. If considered unsuitable for Journal TAP, the Editor-in-chief reserves the right to forward manuscripts to the Editor of Bufora Journal for consideration. The Editor-in-chief's decision will be final.

Book reviews and letters for publication will also be considered.

Where permission is needed for publication of material included in an article, it is the responsibility of the author to acquire this prior to submission. All opinions expressed in articles will be those of the contributor and unless otherwise stated, will not reflect the views of Bufora, its Council or the Editor-in-chief.

The Journal of
Transient Aerial Phenomena

C O N T E N T S

40 Jones' Drove, Whittlesey, Peterborough PE7 2HW