

The next step is to sort out the observations according to some pattern. The particular pattern is not so important as the fact that it should take account of all contingencies, however improbable they may appear at first sight. In other words, there must be a compartment somewhere in the scheme of things into which each sighting may be placed, comfortably, and with nothing left over. Furthermore, it must be possible to arrive at each appropriate compartment by a sequence of logical reasoning taking account of all the facts presented. If this can be done, then the probability for the real existence of the contents of any compartment will be the single or combined weighting factor pertinent to that single or group of sightings. The charts shown in Appendix III were evolved as a means for sorting out the various sightings and provide the pattern which was used in the analysis of those sightings reported to and analysed by the Department of Transport.

Most sightings fit readily into one of the classifications shown, which are of two general types; those about which we know something and those about which we know very little. When the sightings can be classified as something we know about, we need not concern ourselves too much with them, but when they fit into classifications which we don't understand we are back to our original position of whether to deny the evidence, dismiss it as of no consequence, or to accept it and go to work on it. The process of sorting out observations according to these charts and fitting them into compartments can hardly be considered an end in itself. Rather, it is a convenience to clarify thinking and direct activity along profitable channels. It shows at once which aspects are of significance and which may be bypassed. Merely placing a sighting under a certain heading does not explain it; it only indicates where we may start looking for an explanation.

Appendix IV contains summaries of the 1952 sightings as investigated by the Department of Transport. Considerably more data exists in the files of other agencies, and more is being collected as the investigations proceed. While it is not intended to make any reference to an analysis of the records of other agencies, it may be said that the Department of Transport sightings are quite representative of the sightings reported throughout the world. The following is a table of the breakdown of the 25 proper sightings reported during 1952.

NATURE OF SIGHTINGS	NUMBER	WEIGHT
Probably meteor	4	91%
Probably aircraft	1	69%
Probably balloons	1	74%
Probably marker light	1	64%
Bright speck at night, not star or planet	3	75%
Bright speck daylight, not star or planet	1	68%
Luminous ring	1	68%
Shiny cone	1	53%
Circular or elliptical body, shiny day	5	88%
Circular or elliptical body luminous night	5	90%
Unidentified lights of various kinds	2	77%
TOTAL NUMBER OF PROPER SIGHTINGS	25	96%

With reference to the above table, of the four cases identified as probably meteors, their weight works out at 91%, which is the probability that the observers actually did see meteors which appeared as they described them. Considering the circular or elliptical bodies together, their weight works out at 91% for the ten sightings, from which we may conclude that SOMETHING answering this description was actually observed. Similarly we may consider each of the other groups of sightings, taking account of the probability that the observations are reliable.

It is not intended to describe here in detail the intricate and tedious processes by which the sightings are evaluated, beyond the fact that the pattern set forth in the charts of Appendix III is followed. The cardinal rule is that a sighting must fit completely under one or more of the chart headings, with nothing left over and without postulating any additions, deletions, or changes in the facts as reported. Should there be no suitable heading, then obviously the charts must be expanded to provide one, in fact this was the evolution of these charts. Where a sighting may be fitted under more than one heading an arbitrary division of the probability of finding it under each applicable heading is assigned. The sum of such probability figures must of course be unity, and the probability for the real existence under any particular heading is the product of this probability figure and the reliability or weighting factor for the sighting concerned.

It is apparent that the judgment of the people doing the evaluating is bound to enter the picture and may produce substantial numerical differences with reference to sightings listed under certain headings. However, since many headings are automatically eliminated by the nature of the facts available, the discrepancies are confined to the probability figures for the distribution under the remaining headings which are considered eligible, and we end up with definite classifications for the sightings with SOME probability figure for the reality of each group. This has the effect of forcing those who are doing the evaluating to face the reported facts squarely, pay meticulous attention to them, and place each sighting honestly under the only headings where it will fit.

In working through the analysis of the proper sightings listed, we find that the majority of them appear to be of some material body. Of these, seven are classed as probably normal objects, and eleven are classed as strange objects. Of the remainder, four have a substantial probability of being material. strange, objects, with three having a substantial probability of being immaterial, electrical, phenomenae. Of the eleven strange objects the probability definitely favours the alien vehicle class, with the secret missile included with a much lower probability.

The next step is to follow this line of reasoning as far as possible so as to deduce what we can from the observed data. Vehicles or missiles can be of only two general kinds, terrestrial and extra-terrestrial, and in either case the analysis enquires into the source and technology. If the vehicles originate outside the iron curtain we may assume that the matter is in good hands, but if they originate inside the iron curtain it could be a matter of grave concern to us.

In the matter of technology, the points of interest are: - the energy source; means of support, propulsion and manipulation; structure; and biology. So far as energy is concerned we know about mechanical energy and chemical energy, and a little about energy of fission, and we can appreciate the possibility of direct conversion of mass to energy. Beyond this we have no knowledge, and unless we are prepared to postulate a completely unknown source of energy of which we do not know even the rudiments, we must conclude that the vehicles use one of the four listed energy sources. Unless something we do not understand can be done with gravitation, mechanical energy has little use beyond driving model aircraft. We use chemical energy to quite an extent, but we realize its limitations, so if the energy demands of the vehicles exceed what we consider to be the reasonable capabilities of chemical fuels, we are forced to the conclusion that such vehicles must get their energy from either fission or mass conversion.

With reference to the means for support, propulsion and manipulation, unless we are prepared to postulate something else quite beyond our knowledge, there are only the two groups of possibilities, namely the known means and the speculative means. Of the known means there is only physical support through the use of buoyancy or airfoils, the reaction of rockets and jets, and centrifugal force, which is what holds the moon in position. Of the speculative means we know only of the possibility of gravity waves, field interaction and radiation pressure. If the observed behaviour of the vehicles is such as to be beyond the limitations which we know apply to the known means of support, then we are forced to the conclusion that one of the speculative means must have been developed to do the job.

From a study of the sighting reports (Appendix IV), it can be deduced that the vehicles have the following significant characteristics. They are a hundred feet or more in diameter; they can travel at speeds of several thousand miles per hour; they can reach altitudes well above those which would support conventional aircraft or balloons; and ample power and force seem to be available for all required manoeuvres. Taking these factors into account, it is difficult to reconcile this performance with the capabilities of our technology, and unless the technology of some terrestrial nation is much more advanced than is generally known, we are forced to the conclusion that the vehicles are probably extra-terrestrial, in spite of our prejudices to the contrary.

It has been suggested that the sightings might be due to some sort of optical phenomenon which gives the appearance of the objects reported, and this aspect was thoroughly investigated. Charts are shown in Appendix III showing the various optical considerations. Enticing as this theory is, there are some serious objections to its actual application, in the form of some rather definite and quite immutable optical laws. These are the geometrical laws dealing with optics generally and which we have never yet found cause to doubt, plus the wide discrepancies in the order of magnitude of the light values which must be involved in any sightings so far studied. Furthermore, introducing an optical system might explain an image in terms of an object, but the object still requires explaining. A particular effort was made to find an optical explanation for the sightings listed in this report, but in no case could one be worked out. It was not possible to find so much as a partial optical explanation for even one sighting. Consequently, it was felt that optical theories generally should not be taken too seriously until such time as at least one sighting can be satisfactorily explained in such a manner.

It appears then, that we are faced with a substantial probability of the real existence of extra-terrestrial vehicles, regardless of whether or not they fit into our scheme of things. Such vehicles of necessity must use a technology considerably in advance of what we have. It is therefore submitted that the next step in this investigation should be a substantial effort towards the acquisition of as much as possible of this technology, which would without doubt be of great value to us.

W.B. Smith
Engineer-in-Charge,
Project Magnet

Chart I

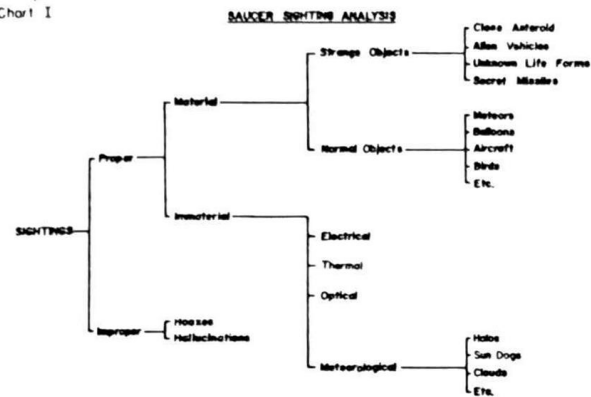


Chart II

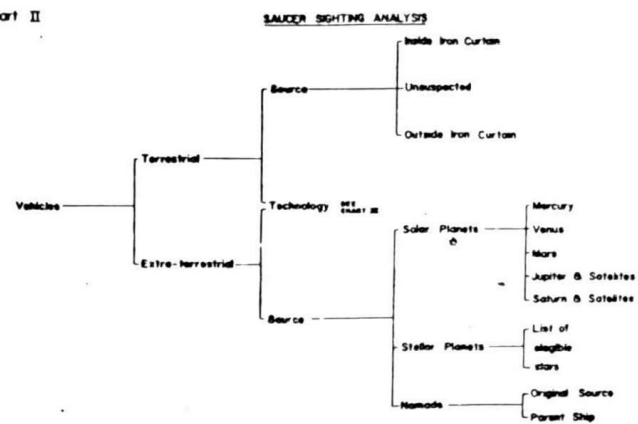


Chart III

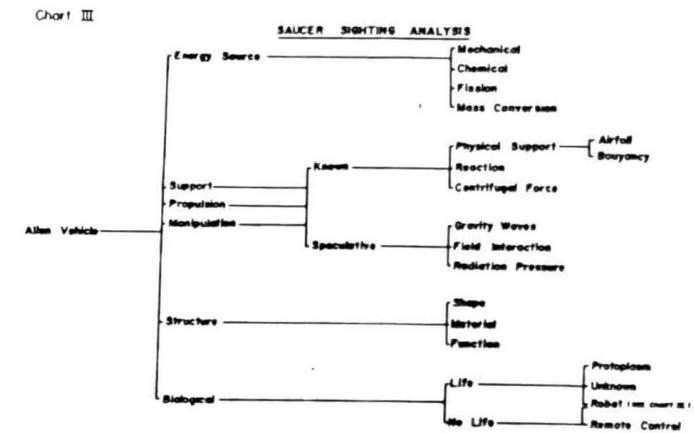


Chart IV

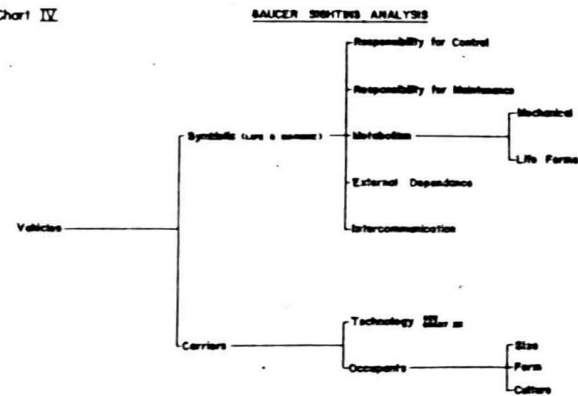


Chart V

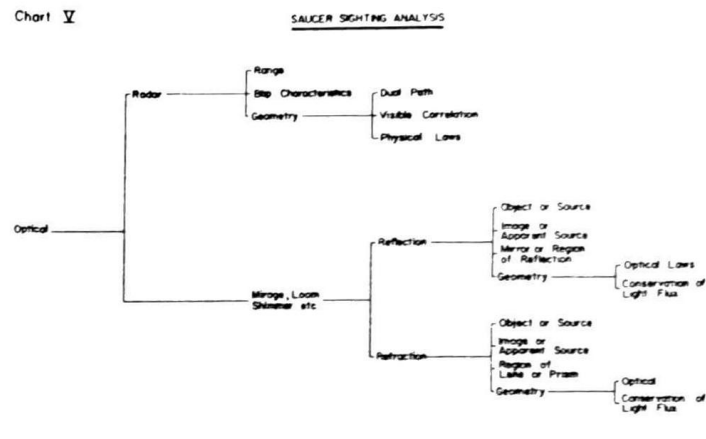


Chart VI

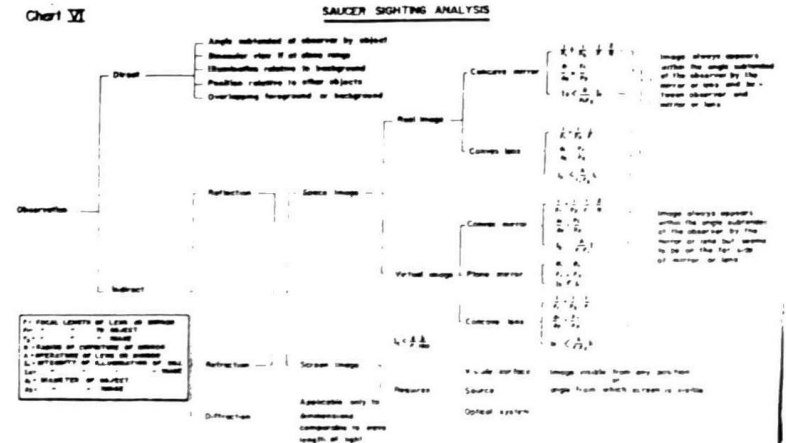


Chart VII

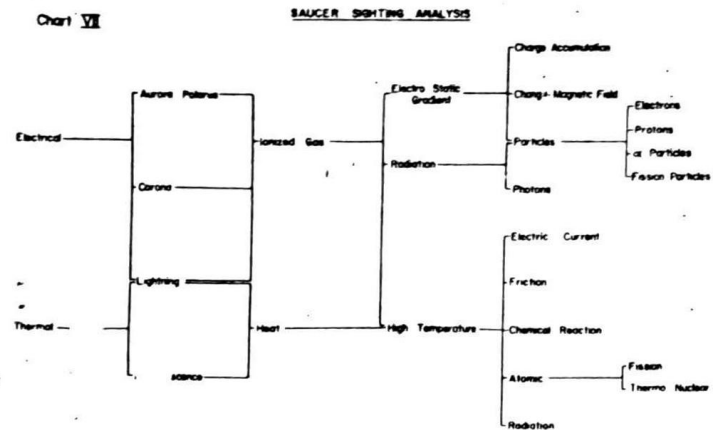


Chart VIII

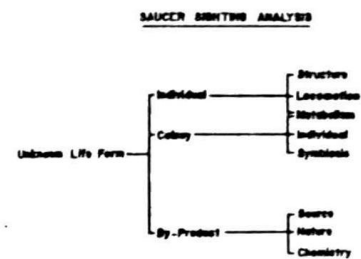
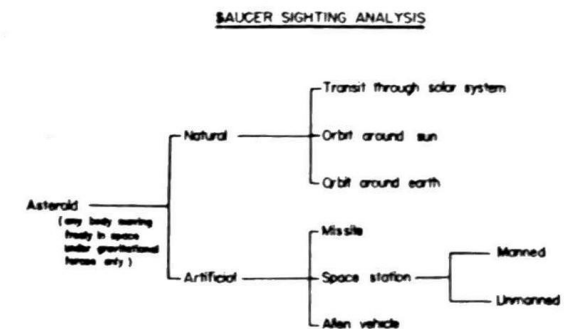


Chart IX



Based on the conclusions of the 1952 report, it was felt that certain of the phenomena would probably be accompanied by physical effects which could be measured, and since measurements are always more satisfactory than qualitative observations, it was decided to try and get some measured data.

Whether the phenomena be due to natural electromagnetic causes, or alien vehicles, there would probably be associated with a sighting some magnetic or radio noise disturbance. Also, there is a possibility of gamma radiation being associated with such phenomena.

It has been suggested by some mathematicians that gravity waves may exist in reality, as well as a convenience to make an equation balance. While we know practically nothing of such waves in nature, nevertheless, if the possibility exists, flying saucer phenomena, being largely an unknown field, might be a good place to look for such gravity waves.

Therefore, a group of instruments was set up in a hut at Shirley Bay for the purpose of trying to get measurements which could be tied to one or more actual sightings. The instruments which could be tied to meter, a gamma-ray counter, a radio net and gravimeter. The outputs of these four instruments are arranged to draw proportional traces on a 4 pen recorder.

These instruments went into operation last October and apart from the usual bugs, seem to be operating satisfactorily. We have as yet obtained no clearer data from them.

Our future plans include study of any data which we may get from our Shirley Bay setup, should we be so fortunate, as well as the continued analysis of sighting reports which come in to us. We propose also to make rigid analysis of unknown phenomena to see how much can be explained on it is basis. Most of the previous work along these lines has been largely qualitative and open to serious objection from the point of view of quantitative analysis.

We intend to promote a study of gravity waves, whether within this Department or outside to find out if:

- a) They exist in nature
- b) How we can detect them if they do
- c) How to generate them, and
- d) What they may be used for.



DEPARTMENT OF TRANSPORT
INTRA-DEPARTMENTAL CORRESPONDENCE

2
4-52

OTTAWA, Ontario, June 16, 1952.

PLACE

DATE

YOUR FILE

SUBJECT

OUR FILE

RESTRICTED

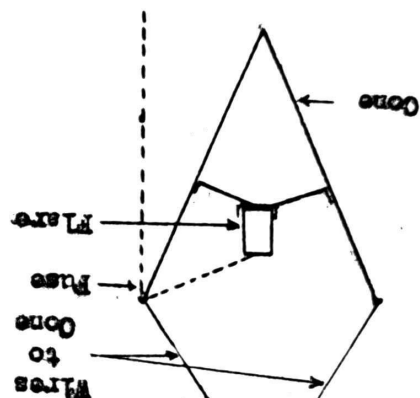
MEMORANDUM TO PROJECT SECOND STOREY COMMITTEE:

1. In conducting various interviews with observers who have sighted various flying objects it was apparent that a certain amount of malobservation and faulty memory was involved.
2. In order to check the general characteristics of public observational capacity it is proposed to arrange for an illuminated object to appear in the Ottawa skies for approximately 1/2 minute with its exact whereabouts and size known only to this Committee. Such an object would be seen by a number of people who could then be interviewed and their statements obtained. Comparison between their statements and the known facts should give a valuable weighting factor to be used in evaluating subsequent observations.
3. The attached sketch shows a relatively simple device for producing the desired effect. It is proposed to inflate an ordinary meteorological balloon to approximately 6 feet in diameter and suspend beneath it at a safe distance, say ten or fifteen feet, a thin aluminum cone in which is mounted a 35 second standard white magnesium flare. The flare could be ignited by an appropriate length of blasting fuse, the rate of burning of which is known, so that the device could be timed to fire at a predetermined altitude. The intense light from the magnesium flare should not be visible to observers on the ground but the rubber balloon should be brilliantly illuminated and should provide a suitable object for observation.
4. The undersigned is prepared to undertake this experiment within the Department of Transport establishment but assistance of the Committee will be required in obtaining release of a suitable flare from the Department of National Defence.

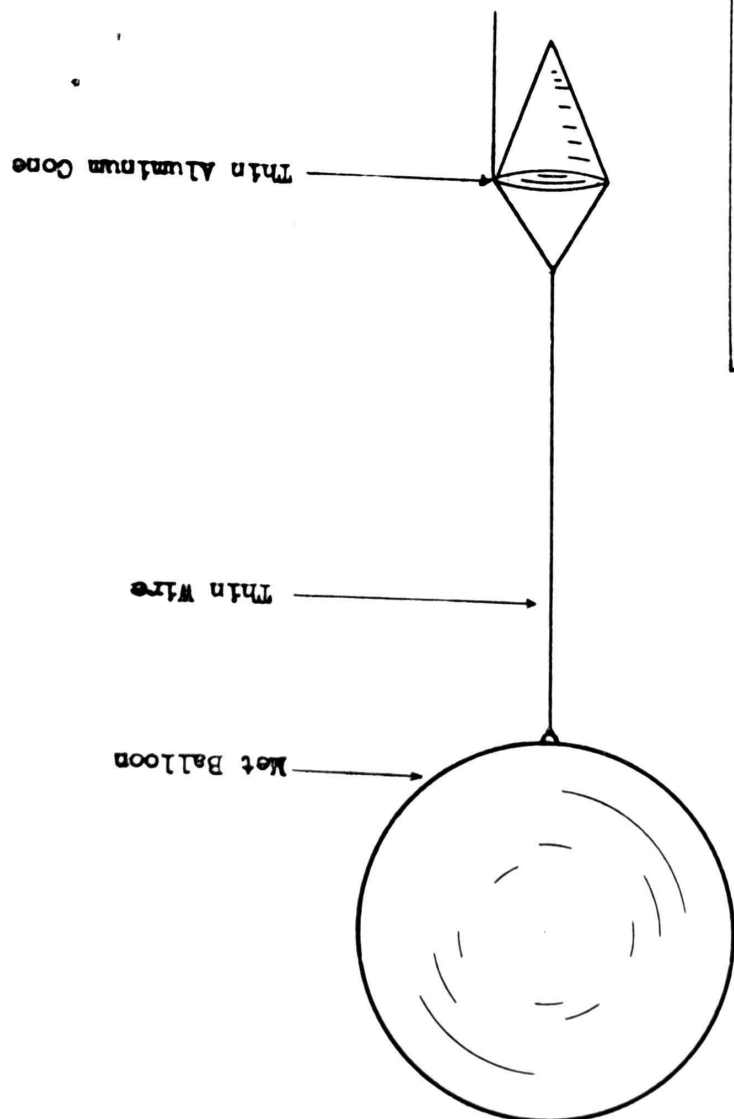
(W.B. Smith)
Senior Radio Engineer

Scale = 1"=2'

Cross Section of Cone



Scale = 1"=4'



DEPARTMENT OF TRANSPORT

INTRA-DEPARTMENTAL CORRESPONDENCE

51/286
20 MAR 1953
4-52

OTTAWA, Ontario, September 10, 1952

PLACE

DATE

YOUR FILE

SUBJECT

DEFENSE MESSAGE
DOCTR

OUR FILE

MEMORANDUM

In order to ascertain the reliability of random observations and reports from the public and press of objects seen in the sky a flare of approximately 1,000 candle power was burned for one minute over the outskirts of Ottawa. Two simultaneous observations of the flare were made by transit from two locations. Location A was at the Ottawa Monitoring Station and Location B was at Uplands Airport.

At 21.45 EST September 8, 1952 a balloon and fused flare were released from Location A. At 21.51 EST the flare ignited and burned for one minute or until 21.52 EST. The bearings obtained were as follows:

	<u>Azimuth</u>	<u>Elevation</u>
Location A	46.35° E. of N.	20°
Location B	3.5° W. of N.	12.5°

These angles would place the balloon over the Rideau Canal near Dow's Lake at an elevation of 1.1 miles.

The flare was clearly visible from Ottawa and did not resemble a meteor or northern lights. It could not be mistaken for a star and could not be associated with the moon which was on the eastern horizon. It could not be mistaken for a plane, since it was soundless and flashed only for a short time from an almost stationary position.

There was no mention made of this object in the newspapers.

(J.H. Thompson)

② Noted

W.D. Birch

27 Mar 53