UFO UpDates Mailing List

03/04 - 22 Years of Inadequate UFO Investigations

From: **Francisco Lopez <d005734c@dcfreenet.seflin.lib.fl.us>**
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a time of some minutes. No ghost-return or multiple-scatter hypothesis can explain such an event.

I believe that the cited sequence of extremely baffling events, involving so many observers and so many distinct observing channels, and exhibiting such unconventional features, should have led to the most intensive Air Force inquiries. But I would have to say precisely the same about dozens of other inexplicable Air Force-related UFO incidents reported to Bluebook since 1947. What the above illustrative case shows all too well is that highly unusual events have been occurring under circumstances where any organization with even passing scientific curiosity should have responded vigorously, yet the Air Force UFO program has repeatedly exhibited just as little response as I have noted in the above 1956 Lakenheath incident. The Air Force UFO program, contrary to the impression held by most scientists here and abroad, has been an exceedingly superficial and generally quite incompetent program. Repeated suggestions from Air Force press offices, to the effect that "the best scientific talents available to the U.S. Air Force" have been brought to bear on the UFO question are so far from the truth as to be almost laughable, yet those suggestions have served to mislead the scientific community, here and abroad, into thinking that careful investigations were yielding solid conclusions to the effect that the UFO problem was a nonsense problem. The Air Force has given us all the impression that its UFO reports involved only misidentified phenomena of conventional sorts. That, I submit, is far from correct, and the Air Force has not responsibly discharged its obligations to the public in conveying so gross a misimpression for twenty years. I charge incompetence, not conspiracy, let me stress.

The Condon Report, although disposed to suspicion that perhaps some sort of anomalous radar propagation might be involved (I record here my objection that the Condon Report exhibits repeated instances of misunderstanding of the limits of anomalous propagation effects), does concede that Lakenheath is an unexplained case. Indeed, the Report ends its discussion with the quite curious admission that, in the Lakenheath episode, "...the probability that at least one genuine UFO was involved appears to be fairly high."

One could easily become enmeshed in a semantic dispute over the meaning of the phrase, "one genuine UFO", so I shall simply assert that my own position is that the Lakenheath case exemplifies a disturbingly large group of UFO reports in which the apparent degree of scientific inexplicability is so great that, instead of being ignored and laughed at, those cases should all along since 1947 have been drawing the attention of a large body of the world's best

scientists. Had the latter occurred, we might now have some answers, some clues to the real nature of the UFO phenomena. But 22 years of inadequate UFO investigations have kept this stunning scientific problem out of sight and under a very broad rug called Project Bluebook, whose final termination on December 18, 1969 ought to mark the end of an era and the start of a new one relative to the UFO problem.

More specifically, with cases like Lakenheath and the 1957 RB-47 case and many others equally puzzling that are to be found within the Condon Report, I contest Condon's principal conclusion "that further extensive study of UFOs probably cannot be justified in the expectation that science will be advanced thereby." And I contest the endorsement of such a conclusion by a panel of the National Academy of Sciences, an endorsement that appears to be based upon essentially _zero_ independent scientific cross-checking of case material in the Report. Finally, I question the judgment of those Air Force scientific offices and agencies that have accepted so weak a report. The Lakenheath case is just one example of the basis upon which I rest those objections. I am prepared to discuss many more examples.

8. The Extraterrestrial Hypothesis:

In this Lakenheath UFO episode, we have evidence of some phenomena defying ready explanation in terms of present-day science and technology, some phenomena that include enough suggestion of intelligent control (tail-chase incident here), or some broadly cybernetic equivalent thereof, that it is difficult for me to see any reasonable alternative to the hypothesis that something in the nature of extraterrestrial devices engaged-in something in the nature of surveillance lies at the heart of the UFO problem. That is the hypothesis that my own study of the UFO problem leads me to regard as most probable in terms of my present information. This is, like all scientific hypotheses, a working hypothesis to be accepted or rejected only on the basis of continuing investigation. Present evidence surely does not amount to incontrovertible proof of the extraterrestrial hypothesis. What I find scientifically dismaying is that, while a large body of UFO evidence now seems to point in no other direction than the extraterrestrial hypothesis, the profoundly important implications of that possibility are going unconsidered by the scientific community because this entire problem has been imputed to be little more than a nonsense matter unworthy of serious scientific attention. Those overtones have been generated almost entirely by scientists and others who have done essentially no real investigation of the problem-area in which they express such strong opinions. Science is not supposed to proceed in that manner, and this AAAS Symposium should see an end to such approaches to the UFO problem.

Put more briefly, doesn't a UFO case like Lakenheath warrant more than a mere shrug of the shoulders from science?

Case 3. Haneda Air Force Base, Japan, August 5-6, 1952.

Brief summary: USAF tower operators at Haneda AFB observed an unusually bright bluish-white light to their NE, alerted the GCI radar unit at Shiroi, which then called for a scramble of an F94 interceptor after getting radar returns in same general area. GCI ground radar vectored the F94 to an orbiting unknown target, which the F94 picked up on its airborne radar. The target then accelerated out of the F94's radar range after 90 seconds of pursuit that was followed also on the Shiroi GCI radar.

1. Introduction:

The visual and radar sightings at Haneda AFB, Japan, on August 5-6, 1952, represent an example of a long-puzzling case, still carried as an unidentified case by Project Bluebook, at my latest check, and chosen for analysis in the Condon Report. In the latter, is putatively explained in terms of a combination of diffraction and mirage distortion of the star Capella, as far as the visual parts are concerned, while the radar portions are attributed to anomalous propagation. I find very serious difficulties with those "explanations" and regard them as typical of a number of rather casually advanced explanations of long-standing UFO cases that appear in the Condon Report. Because this case has been discussed in such books as those of Ruppelt, Keyhoe, and Hall, it is of particular interest to carefully examine case-details on it and then to examine the basis of the Condon Report's explanation of it, as example of how the Condon Report disposed of old "classic cases."

Haneda AFB, active during the Korean War, lay about midway between central Tokyo and central Yokohama, adjacent to Tokyo International Airport. The 1952 UFO incident began with visual sightings of a brilliant object in the northeastern sky, as seen by two control tower operators going on duty at 2330 LST (all times hereafter will be LST). It will serve brevity to introduce some coded name designations for these men and for several officers involved, since neither the Condon Report, nor my copies of the original Bluebook case-file

show names (excised from latter copies in accordance with Bluebook practice on non-release of witness names in UFO cases):

Coded Designation	Identification
Airman A	One of two Haneda tower operators who first sighted light. Rank was A/3c.
Airman B	Second Haneda tower operator to first sight light. Rank was A/1c.
Lt. A	Controller on duty at Shiroi GCI unit up to 2400, 8/5/52. Rank was 1st Lt.
Lt. B	Controller at Shiroi after 0000, 8/6/52, also 1st Lt.
Lt. P	Pilot of scrambled F94, also 1st Lt.
Lt. R	Radar officer in F94, also 1st Lt.

Shiroi GCI Station, manned by the 528th AC&W (Aircraft Control and Warning) Group, lay approximately 20 miles NE of Haneda (specifically at 35 deg. 49' N, 140 deg. 2' E) and had a CPS-1 10-cm search radar plus a CPS 10-cm height-finding radar. Two other USAF facilities figure in the incident, Tachikawa AFB, lying just over 20 miles WNW of Haneda, and Johnson AFB, almost 30 miles NW of Waneda. The main radar incidents center over the north extremity of Tokyo Bay, roughly midway from central Tokyo to Chiba across the Bay.

The Bluebook case-file on this incident contains 25 pages, and since the incident predates promulgation of AFR200-2, the strictures on time-reporting, etc., are not here so bothersome as in the Lakenheath case of 1956, discussed above. Nevertheless, the same kind of disturbing internal inconsistencies are present here as one finds in most Bluebook case reports; in particular, there is a bothersome variation in times given for specific events in different portions of the case-file. One of these, stressed in the Condon Report, will be discussed explicitly below; but for the rest, I shall use those times which appear to yield the greatest over-all internal consistency. This will introduce no serious errors, since the uncertainties are mostly only 1 or 2 minutes and, except for the cited instance, do not alter any important implications regardless of which cited time is used. The over-all duration of the visual and radar sightings is about 50 minutes. The items of main interest occurred between 2330 and 0020, approximately.

Although this case involves both visual and radar observations of unidentified objects, careful examination does not support the view that the same object was ever assuredly seen visually and on radar at the same time, with the possible exception of the very first radar detection just after 2330. Thus it is not a "radar-visual" case, in the more significant sense of concurrent two-channel observations of an unknown object. This point will be discussed further in Section 5.

2. Visual Observations:

a. First visual detection.

At 2330, Airmen A and B, while walking across the ramp at Haneda AFB to go on the midnight shift at the airfield control tower, noticed an "exceptionally bright light" in their northeastern sky. They went immediately to the control tower to alert two other on-duty controllers to it and to examine it more carefully with the aid of the 7x50 binoculars available in the tower. The Bluebook case-file notes that the two controllers already on tower-duty "had not previously noticed it because the operating load had been keeping their attention elsewhere. "

b. Independent visual detection at Tachikawa AFB.

About ten minutes later, according to the August 12, 1952, Air Intelligence Information Report (IR-35-52) in the Bluebook case-file; Haneda was queried about an unusually bright light by controllers at Tachikawa AFB, 21 miles to their WNW. IR-35-52 states: "The control tower at Tachikawa Air Force Base called Haneda tower at approximately 2350 to bring their attention to a brilliant white light over Tokyo Bay. The tower replied that it had been in view for some time and that it was being checked."

This feature of the report is significant in two respects: 1) It indicates that the luminous source was of sufficiently unusual brilliance to cause two separate groups of Air Force controllers at two airfields to respond

independently and to take alert-actions; and 2) More significantly, the fact that the Tachikawa controllers saw the source in a direction "over Tokyo Bay" implies a line-of-sight distinctly south of east. From Tachikawa, even the north end of the Bay lies to the ESE. Thus the intersection of the two lines of sight fell somewhere in the northern half of the Bay, it would appear. As will be seen later, this is where the most significant parts of the radar tracking occurred subsequently.

c. Direction, intensity, and configuration of the luminous source.

IR-35-52 contains a signed statement by Air man A, a sketch of the way the luminous source looked through 7-power binoculars, and summary comments by Capt. Charle"s J. Malven, the FEAF intelligence officer preparing the report for transmission to Bluebook.

Airman A's own statement gives the bearing of the source as NNE; Malven summary specifies only NE. Presumably the witness' statement is the more reliable, and it also seems to be given a greater degree of precision, whence a line-of-sight azimuth somewhere in the range of 25 to 35 deg. east of north appears to be involved in the Haneda sightings. By contrast, the Tachikawa sighting-azimuth was in excess of 90 deg. from north, and probably beyond 100 deg., considering the geography involved, a point I shall return to later.

Several different items in the report indicate the high _intensity_ of the source. Airman A's signed statement refers to it as "the intense bright light over the Bay." The annotated sketch speaks of "constant brilliance across the entire area" of the (extended) source, and remarks on "the blinding effect from the brilliant light." Malven's summary even points out that "Observers stated that their eyes would fatigue rapidly when they attempted to concentrate their vision on the object," and elsewhere speaks of "the brilliant blue-white light of the object." Most of these indications of brightness are omitted from the Condon Report, yet bear on the Capella hypothesis in terms of which that Report seeks to dispose of these visual sightings.

Airman A's filed statement includes the remark that "I know it wasn't a star, weather balloon or venus, because I compared it with all three." This calls for two comments. First, Venus is referred to elsewhere in the case-file, but this is certainly a matter of confusion, inasmuch as Venus had set that night before about 2000 LST. Since elsewhere in the report reference is made to Venus lying in the East, and since the only noticeable celestial object in that sector at that time would have been Jupiter, I would infer that where "Venus" is cited in the case-file, one should read "Jupiter." Jupiter would have risen near 2300, almost due east, with apparent magnitude -2.0. Thus Airman A's assertion that the object was brighter than "Venus" may probably be taken to imply something of the order of magnitude -3.0 or brighter. Indeed, since it is most unlikely that any observer would speak of a -3.0 magnitude source as "blinding" or "fatiguing" to look at, I would suggest that the actual luminosity, at its periods of peak value (see below) must have exceeded even magnitude -3 by a substantial margin.

Airman A's allusion to the intensity as compared with a "weather balloon" refers to the comparisons (elaborated below) with the light suspended from a pilot balloon released near the tower at 2400 that night and observed by the tower controllers to scale the size and brightness. This is a very fortunate scaling comparison, because the small battery-operated lights long used in meteorological practice have a known luminosity of about 1.5 candle. Since a 1-candle source at 1 kilometer yields apparent magnitude 0.8, inverse-square scaling for the here known balloon distance of 2000 feet (see below) implies an apparent magnitude of about -0.5 for the balloon-light as viewed at time of launch. Capt. Malven's summary states, in discussing this quite helpful comparison, "The balloon's light was described as extremely dim and yellow, when compared to the brilliant blue white light of the object." Here again, I believe one can safely infer an apparent luminosity of the object well beyond Jupiter's -2.0. Thus, we have here a number of compatible indications of apparent brightness well beyond that of any star, which will later be seen to contradict explanations proposed in the Condon Report for the visual portions of the Haneda sightings.

Of further interest relative to any stellar source hypothesis are the descriptions of the _configuration_ of the object as seen with 7-power binoculars from the Haneda tower, and its approximate _angular diameter_. Fortunately, the latter seems to have been adjudged in direct comparison with an object of determinate angular subtense that was in view in the middle of the roughly 50-minute sighting. At 2400, a small weather balloon was released from a point at a known distance of 2000 ft from the control tower. Its diameter at release was approximately 24 inches. (IR-35-52

refers to it as a "ceiling balloon", but the cloud-cover data contained therein is such that no ceiling balloon would have been called for. Furthermore, the specified balloon mass, 30 grams, and diameter, 2 ft, are precisely those of a standard pilot balloon for upper-wind measurement. And finally, the time [2400 LST = 1500Z] was the standard time for a pilot balloon run, back in that period.) A balloon of 2-ft diameter at 2000-ft range would subtend 1 milliradian, or just over 3 minutes of arc, and this was used by the tower observers to scale the apparent angular subtense of the luminous source. As IR-35-52 puts it: "Three of the operators indicated the size of the light, when closest to the tower, was approximately the same as the small ceiling balloons (30 grams, appearing 24 inches in diameter) when launched from the weather station, located at about 2000 ft from the tower. This would make the size of the central light about 50 ft in diameter, when at the 10 miles distance tracked by GCI.... A lighted weather balloon was launched at 2400 hours..." Thus, it would appear that an apparent angular subtense close to 3 minutes of arc is a reasonably reliable estimate for the light as seen by naked eye from Haneda. This is almost twice the average resolution-limit of the human eye, quite large enough to match the reported impressions that it had discernible extent, i.e., was not merely a point source.

But the latter is very much more clearly spelled out, in any event, for IR-35-52 gives a fairly detailed description of the object's appearance through 7-power binoculars. It is to be noted that, if the naked-eye diameter were about 3 minutes, its apparent subtense when viewed through 7X-binoculars would be about 20 minutes, or two-thirds the naked-eye angular diameter of the full moon -- quite large enough to permit recognition of the finer details cited in IR-35-52, as follows: "The light was described as circular in shape, with brilliance appearing to be constant across the face. The light appeared to be a portion of a large round dark shape which was about four times the diameter of the light. When the object was close enough for details to be seen, a smaller, less brilliant light could be seen at the lower left hand edge, with two or three more dim lights running in a curved line along the rest of the lower edge of the dark shape. Only the lower portion of the darker shape could be determined, due to the lighter sky which was believed to have blended with the upper side of the object. No rotation was noticed. No sound was heard."

Keeping in mind that those details are, in effect, described for an image corresponding in apparent angular size to over half a lunar diameter, the detail is by no means beyond the undiscernible limit. The sketch included with IR-35-52 matches the foregoing description, indicating a central disc of "constant brilliance across entire area (not due to a point source of light)", an annular dark area of overall diameter 3-4 times that of the central luminary, and having four distinct lights on the lower periphery, "light at lower left, small and fairly bright, other lights dimmer and possibly smaller." Finally, supportive comment thereon is contained in the signed statement of Airman A. He comments: "After we got in the tower I started looking at it with binoculars, which made the object much clearer. Around the bright white light in the middle, there was a darker object which stood out against the sky, having little white lights along the outer edge, and a glare around the whole thing."

All of these configurational details, like the indications of a quite un-starlike brilliance, will be seen below to be almost entirely unexplainable on the Capella hypothesis with which the Condon Report seeks to settle the Haneda visual sightings. Further questions ultimately arise from examination of reported apparent motions of the luminous source, which will be considered next.

d. Reported descriptions of apparent motions of the luminous source.

Here we meet the single most important ambiguity in the Haneda case-file, though the weight of the evidence indicates that the luminous object exhibited definite movements. The ambiguity arises chiefly from the way Capt. Malven summarized the matter in his IR-35-52 report a week after the incident; "The object faded twice to the East, then returned. Observers were uncertain whether disappearance was due to a dimming of the lights, rotation of object, or to the object moving away at terrific speed, since at times of fading the object was difficult to follow closely, except as a small light. Observers did agree that when close, the object did appear to move horizontally, varying apparent position and speed slightly." Aside from the closing comment, all of Malven's summary remarks could be interpreted as implying either solely radial motion (improbable because it would imply the Haneda observers just happened to be in precisely the spot from which no crosswise velocity component could be perceived) or else merely illusion of approach and recession due to some intrinsic or extrinsic time-variation in apparent brightness.

In contrast to the above form in which Malven summarized the reported motions, the way Airman A described them in his own statement seems to refer to distinct motions, including transverse components: "I watched it disappear twice through the glasses. It seemed to travel to the East and gaining altitude at a very fast speed, much faster than any jet. Every time it disappeared it returned again, except for the last time when the jets were around. It seemed to know they were there. As for an estimate of the size of the object -- I couldn't even guess." Recalling that elsewhere in that same signed statement this tower controller had given the observed direction to the object as NNE, his specification that the object "seemed to travel to the East" seems quite clearly to imply a non radial motion, since, if only an impression of the latter were involved, one would presume he would have spoken of it in some such terms as "climbing out rapidly to the NNE". Since greater weight is presumably to be placed on direct-witness testimony than on another's summary thereof, it appears necessary to assume that not mere radial recession but also transverse components of recession. upwards and towards the East, were observed.

That the luminous source varied substantially in angular subtense is made very clear at several points in the case-file: One passage already cited discusses the "size of the light, when closest to the tower...", while, by contrast, another says that: "At the greatest distance, the size of the light appeared slightly larger than Venus, approximately due East of Haneda, and slightly brighter." (For "Venus" read "Jupiter" as noted above. Jupiter was then near quadrature with angular diameter of around 40 seconds of arc. Since the naked eye is a poor judge of comparative angular diameters that far below the resolution limit, little more can safely be read into that statement than the conclusion that the object's luminous disc diminished quite noticeably and its apparent brightness fell to a level comparable to or a bit greater than Jupiter's when at greatest perceived distance. By virtue of the latter, it should be noted, one has another basis for concluding that when at peak brilliance it must have been considerably brighter than Jupiter's -2.0, a conclusion already reached by other arguments above.

In addition to exhibiting what seems to imply recession, eastward motion, and climb to disappearance, the source also disappeared for at least one other period far too long to be attributed to any scintillation or other such meteorological optical effect: "When we were about half way across the ramp (Airman A stated), it disappeared for the first time and returned to approximately the same spot about 15 seconds later." There were scattered clouds over Haneda at around 15-16,000 ft, and a very few isolated clouds lower down, yet it was full moon that night and, if patches of clouds had drifted very near the controllers' line-of-sight to the object, they could be expected to have seen the clouds. (The upper deck was evidently thin, for Capt. Malven notes in his report that "The F94 crew reported exceptional visibility and stated that the upper cloud layer did not appreciably affect the brilliancy of the moonlight.") A thin cloud interposed between observer and a distant luminous source would yield an impression of dimming and enhanced effective angular diameter, not dimming and reduced apparent size, as reported here. I believe the described "disappearances" cannot, in view of these several considerations, reasonably be attributed to cloud effects.

I have now summarized the essential features of the Haneda report dealing with just the visual observations of some bright luminous source that initiated the alert and that led to the ground-radar and air borne-radar observations yet to be described. Before turning to those, which comprise, in fact, the more significant portion of the over-all sighting, it will be best to turn next to a critique of the Blue book and the Condon Report attempts to give an explanation of the visual portions of the sighting.

3. Bluebook Critique of the Visual Sightings:

In IR-35-52. Capt, Malven offers only one hypothesis, and that in only passing manner: He speculates briefly on whether "reflections off the water (of the Bay, I presume) were...sufficient to form secondary reflections off the lower clouds," and by the latter he refers to "isolated patches of thin clouds reported by the F-94 crew as being at approximately 4000 feet..." He adds that "these clouds were not reported to be visible by the control tower personnel," which, in view of the 60-mile visibility cited elsewhere in the case-file and in view of the full moon then near the local meridian, suggests that those lower clouds must have been exceedingly widely scattered to escape detection by the controllers.

What Malven seems to offer there, as an hypothesis for the observed visual source, is cloud-reflection of moonlight -- and in manner all too typical of many other curious physical explanations one finds scattered through Bluebook case-files, he brings in a consideration that reveals lack of appreciation of what is central to the issue. If he wants to talk about cloud-reflected moonlight, why render a poor argument even weaker by invoking not direct moon

light but moonlight secondarily reflected off the surface of Tokyo Bay? Without even considering further that odd twist in his tentative hypothesis, it is sufficient to note that even direct moonlight striking a patch of cloud is not "reflected in any ordinary sense of that term. It is scattered from the cloud droplets and thereby serves not to create any image of a discrete light source of blinding intensity that fatigues observers' eyes and does the other things reported by the Haneda observers, but rather serves merely to palely illuminate a passing patch of cloud material. A very poor hypothesis.

Malven drops that hypothesis without putting any real stress on it (with judgment that is not always found where equally absurd "explanations" have been advanced in innumerable other Bluebook case-files by reporting officers or by Bluebook staff members). He does add that there was some thunderstorm activity reported that night off to the northwest of Tokyo, but mentions that there was no reported electrical activity therein. Since the direction is opposite to the line of sight and since the reported visual phenomena bear no relation to lightning effects, this carried the matter no further, and the report drops that point there.

Finally, Malven mentions very casually an idea that I have encountered repeatedly in Bluebook files yet nowhere else in my studies of atmospheric physics, namely, "reflections off ionized portions of the atmosphere." He states: "Although many sightings might be attributed to visual and electrical reflections off ionized areas in the atmosphere, the near-perfect visibility on the night of the sighting, together with the circular orbit of the object would tend to disprove this theory." Evidently he rejects the "ionized areas" hypothesis on the ground that presence of such areas is probably ruled out in view of the unusually good visibility reported that night. I trust that, for most readers of this discussion, I would only be belaboring the obvious to remark that Bluebook mythology about radar and visual "reflections" off "ionized regions" in the clear atmosphere (which mythology I have recently managed to trace back even to pre-1950 Air Force documents on UFO reports) has no known basis in fact, but is just one more of the all too numerous measures of how little scientific critique the Air Force has managed to bring to bear on its UFO problems over the years.

Although the final Bluebook evaluation of this entire case, including the visual portions, was and is "Unidentified", indicating that none of the above was regarded as an adequate explanation of even the visual features of the report, one cannot overlook extremely serious deficiencies in the basic report ing and the interrogation and follow-up here. This incident occurred in that period which my own studies lead me to describe as sort of a highwater mark for Project Bluebook. Capt. Edward J. Ruppelt was then Bluebook Officer at Wright-Patterson AFB, and both he and his superiors were then taking the UFO problem more seriously than it was taken by USAF at any other time in the past 22 years. Neither before nor after 1952-3 were there as many efforts made to assemble case-information, to go out and actually check in the field on sightings, etc. Yet it should be uncomfortably apparent already at this point in this discussion of the Haneda case that quite basic points were not run to ground and pinned down. Ruppelt, in his 1956 book, speaks of this Haneda case as if it were regarded as one of the most completely reported cases they'd received as of mid-1952. He mentioned that his office sent a query to FEAF offices about a few points of confusion, and that the replies came back with impressive promptness, etc. If one needed some specific clue to the regrettably low scientific level of the operation of Bluebook even during this period of comparatively energetic case-investigation, one can find it in study of the Haneda report. Even so simple a matter as checking whether Venus was actually in the East was obviously left undone; and numerous cross-questions and followup queries on motions, angles, times, etc., not even thought of. That, I stress, is what any scientist who studies the Bluebook files as I have done will find all through 22 years of Air Force handling of the UFO problem. Incompetence and superficiality -- even at the 1952 highwater mark under Ruppelt's relatively vigorous Project-direction.

4. Condon Report Critique of the Visual Sightings:

On p. 126 of the Condon Report, the luminous source discussed above is explained as a diffracted image of the star Capella: "The most likely source to have produced the visual obJect is the star Capella (magnitude 0.2), which was 8 deg. above horizon at 37 deg. azimuth at 2400 LST. The precise nature of the optical propagation mechanism that would have produced such a strangely diffracted image as reported by the Haneda AFB observers must remain conjectural."

Suggesting that perhaps "a sharp temperature inversion may have existed at the top of (an inferred) moist layer, below which patches of fog or mist could collect," the Report continues as follows: "The observed diffraction pattern could have been produced by either (1) interference effects associated with propagation within and near the top of an inversion, or (2) a corona with a dark aureole produced by a mist of droplets of water of about 0.2 mm diameter spaced at regular intervals is described by Minnaert (1954). In either event,

the phenomenon must be quite rare. The brightness of the image may have been due in part to 'Raman brightening' of an image seen through an inversion layer."

And in the final paragraph discussing this case, the Condon Report merely rounds it off to: "In summary , it appears that the most probable causes of this UFO report are an optical effect on a bright light source that produced the visual sighting..." (and goes on to a remark on the radar portions we have yet to examine here) .

There are some very serious difficulties with the more specific parts of the suggested explanation, and the vagueness of the other parts is sufficiently self-evident to need little comment.

First, nothing in the literature of meteorological optics discusses any diffraction-produced coronae with a dark annular space extending out to three or four diameters of the central luminary, such as is postulated in the above Condon Report explanation. The radial intensity pattern of a corona may be roughly described as a damped oscillatory radial variation of luminosity, with zero intensity minima (for the simple case of a monochromatic luminary) at roughly equal intervals, and no broad light-free annulus comparable to that described in detail by the Haneda controllers. Thus, lack of understanding of the nature of coronae is revealed at the outset in attempting to fit the Haneda observations to such a phenomenon.

Second, droplets certainly do not have to be "spaced at regular intervals" to yield a corona, and Minnaert's book makes no such suggestion, another measure of misunderstanding of the meteorological optics here concerned. Nor is there any physical mechanism operating in clouds capable of yielding any such regular droplet spacing. Both Minnaert and cloud physics are misunderstood in that passage.

Third, one quickly finds, by some trial calculations, using the familiar optical relation (Exner equation) for the radial positions of the minima of the classical corona pattern, that the cited drop diameter of 0.2 mm = 200 microns was obtained in the Condon Report by back-calculating from a tacit requirement that the first-order minimum lay close to 3 milliradians, for these are the values that satisfy the Exner equation for an assumed wavelength of about 0.5 microns for visible light. This discloses even more thorough misunderstanding of corona optics, for that first-order minimum marks not some outer edge of a broad dark annulus as described and sketched by the Haneda tower operators, but the outer edge of the innermost annulus of high intensity of diffracted light. This clearly identifies basic misunderstanding of the matters at hand.

Fourth, the just-cited computation yielded a droplet diameter of 200 microns, which is so large as to be found only in drizzling or raining clouds and never in thin scattered clouds of the sort here reported, clouds that scarcely attenuated the full moon's light. That is, the suggestion that "patches of fog or mist" collected under an hypothesized inversion could grow droplets of that large size is meteorologically out of the question. If isolated patches of clouds interposed themselves on an observer's line of sight to some distant luminary, under conditions of the sort prevailing at Haneda that night, drop diameters down in the range of 10-20 microns would be the largest one could expect, and the corona-size would be some 10 to 20 times greater than the 3 milliradians which was plugged into the Exner equation in the above-cited computation. And this would, of course, not even begin to match anything observed that night.

Fifth, the vague suggestion that "Raman brightening" or other "interference effects associated with propagation within and near the top of an inversion" is involved here makes the same serious error that is made in attempted optical explanations of other cases in the Condon Report. Here we are asked to consider that light from Capella, whose altitude was about 8 deg. above the NE horizon (a value that I confirm) near the time of the Haneda observations, was subjected to Raman brightening or its equivalent; yet one of the strict requirements of all such interference effects is that the ray paths impinge on the inversion surface at grazing angles of incidence of only a small fraction of a degree. No ground observer viewing Capella at 8 deg. elevation angle could possibly see anything like Raman brightening, for the pertinent angular limits would be exceeded by one or two orders of magnitude. Added to this measure of misunderstandlng of the optics of such interference phenomena in this attempted explanation is the further difficulty that, for any such situation as is hypothesized in the Condon Report explanation, the observer's eye must be physically located at or directly under the index-discontinuity, which would here mean up in the air at the altitude of the hypothesized inversion. But all of the Haneda observations were made from the ground level. Negation of Raman brightening leaves one more serious gap in the Capella hypothesis, since its magnitude of 0.2 lies at a brightness level well below that of Jupiter, yet the Haneda observers seem to have been comparing the object's luminosity to Jupiter's and finding it far brighter, not dimmer.

Sixth, the Condon Report mentions the independent sighting from Tachikawa AFB, but fails to bring out that the line of sight from that observing site (luminary described as lying over Tokyo Bay, as seen from Tachikawa) pointed more than 45 deg. away from Capella, a circumstance fatal to fitting the Capella hypothesis to both sightings. Jupiter lay due East, not "over Tokyo Bay" from Tachikawa, and it had been rising in the eastern sky for many days, so it is, in any event, unlikely to have suddenly triggered an independent response at Tachikawa that night. And, conversely, the area intersection of the reported lines of sight from Haneda and Tachikawa falls in just the North Bay area where Shiroi GCI first got radar returns and where all the subsequent radar activity was localized.

Seventh, nothing in the proffered explanations in the Condon Report confronts the reported movements and disappearances of the luminous object that are described in the Bluebook case-file on Haneda. If, for the several reasons offered above, we conclude that not only apparent radial motions, but also lateral and climbing motions were observed, neither diffraction nor Raman effects can conceivably fit them.

Eighth, the over-all configuration as seen through 7X binoculars, particularly with four smaller lights perceived on the lower edge of the broad, dark annulus, is not in any sense explained by the ideas qualitatively advanced in the Condon Report on the weak basis now remarked.

Ninth, the Condon Report puts emphasis on the point that, whereas Haneda and Tachikawa observers saw the light, airmen at the Shiroi GCI site went outside and looked in vain for the light when the plotted radar position showed one or more targets to their south or south-southeast. This is correct. But we are quite familiar with both highly directional and semi-directional light sources on our own technological devices, so the failure to detect a light from the Shiroi side does not very greatly strengthen the hypothesis that Capella was the luminary in the Haneda visual sightings. The same can be said for lack of visual observations from the F-94, which got only radar returns as it closed on its target,

I believe that it is necessary to conclude that the "explanation" proposed in the Condon Report for the visual portions of the Haneda case are almost wholly unacceptable. And I remark that my analysis of many other explanations in the Condon Report finds them to be about equally weak in their level of scientific argumentation. We were supposed to get in the Condon Report a level of critique distinctly better than that which had come from Bluebook for many years; but much of the critique in that Report is little less tendentious and ill-based than that which is so dismaying in 22 years of Air Force discussions of UFO cases. The above stands as only one illustration of the point I make there; many more could be cited.

Next we must examine the radar aspects of the 8/5-6/52 Haneda case.

5. Radar Observations:

Shortly after the initial visual sighting at Haneda, the tower controllers alerted the Shiroi GCI radar unit (located about 15 miles NE of central Tokyo), asking them to look for a target somewhere NE of Haneda at an altitude which they estimated (obviously on weak grounds) to be somewhere between 1500 and 5000 feet, both those figures appearing in the Bluebook case-file. Both a CPS-1 search radar and a CPS-4 height-finder radar were available at Shiroi, but only the first of those picked up the target, ground clutter interference precluding useful CPS-4 returns. The CPS-1 radar was a 10-cm, 2-beam set with peak power of 1 megawatt, PRF of 400/sec, antenna tilt 3 deg., and scan-rate operated that night at 4 rpm. I find no indication that it was equipped with

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