UFO UpDates Mailing List

Re: Bruce Maccabee

From: **Bruce Maccabee <brumac@compuserve.com>**
Date: Tue, 27 Jul 1999 17:58:36 -0400
Fwd Date: Wed, 28 Jul 1999 16:27:08 -0400
Subject: Re: Bruce Maccabee

>From: Roger Evans <moviestuff@cyberjunkie.com>
>Date: Mon, 26 Jul 1999 21:32:29 +0000
>To: UFO UpDates - Toronto <updates@globalserve.net>
>Subject: Kenneth Arnold's 'Flying Discs'

>>From: Bruce Maccabee <brumac@compuserve.com>
>>Date: Sun, 25 Jul 1999 17:07:57 -0400
>>Fwd Date: Mon, 26 Jul 1999 10:38:45 -0400
>>Subject: Re: Kenneth Arnold's 'Flying Discs'

>Previously, Bruce had offered:

>>>>What is more likely to be wrong: that his time
>>>>estimate is too short or his estimate of initial distance is
>>>>wrong? I vote for the initial distance estimate.

>To which I had essentially questioned why it was okay for Bruce
>or others to make assumtions about the validity and accuracy of
>Arnold's statements to support their own theories; but not for
>Easton to have the same right, regardless of what his theory
>might be.

>Bruce responded:

><much respected snip>

>>Everyone is "selective" in deciding whether to
>>accept ("believe") in the accuracy of certain values of
>>quantities or certain descriptions by witnesses. The
>>descriptions have to be rated on a scale of something like
>>"probability of being correct" or "which is more likely to be
>>correct."

<snip>

>If it is allright for you to make assumptions, fill in the
>blanks and disregard statements that don't fit your theory, then
>why can't anyone else, including Easton?

Well, didn't I say "everybody does it"? I'm not surprised
that Easton has done it. The argument always comes down to
whether or not it is logical or at least "convincing" to reject
some data and accept some other data in order to arrive at a
solution.

Incidently, there is no "theory" of what a UFO should be, how
fast it could go, what it should look like and do. If we knew a
priori the characteristics of UFOs then we could attempt a
positive identification (if walks like a UFO, talks like a UFO
and looks like a UFO, then it's a UFO). Unfortunately without

this a priori knowledge we can only look for a "negative proof," that is, "this phenomenon has characteristics that match no known phenomenon, therefore it is 'unidentified'... a UFO. In this particular case, part of the negative proof that Arnold saw UFOs would be that he didn't see pelicans. In other words, I would claim "proof" that he didn't see:

(a) mirage,
(b) motes in the eye,
(c) normal aircraft glinting in the distance,
(d) reflections of bright objects in window glass,
(e) billowing clouds of snow,
(f) reflective wavy haze layers,
(g) orographic clouds,
(h) large aircraft nearby,
(i) water drops on his windshielf,
(j) swans,
(k) meteors and
(l) pelicans.

(All of the preceding have been proposed over the years.)

So, what did he see if none of these? Either come up with some other explanation or conclude that Arnold saw "TRUFOs"... TRuely Unidentifiable Flying Objects" where "unidentifiable" means cannot be identified as a mundane/prosaic/known phenomenon (ET craft, time travelers, etc., are assumed to be "unknown" phenomena).

Now, in order to achieve this negative proof in regard to the PH (pelican hypothesis) one must be able to show that the characteristics of the POTENTIAL UFOs must be different from the known characteristics of the pelicans. Maccabee's First Law of Explanation is that any prosaic phenomenon that is suggested as an explanation must, itself, obey known physical laws. Thus, for example, it would be unphysical to attribute specularity (reflective like a mirror or polished metal) to a pelican because the feathers are finely divided reflecting surfaces which can have a "sheen" or "gloss" under certain optimum circumstances of lighting, but not a specular reflection. In general they have a diffuse reflection (like paper, as compared with a mirror). Hence it makes no physical sense to say that Arnold could see the reflection from pelicans at a distance beyond the distance at which he could see the pelicans themselves.

Sorry, but this gets a bit complicated: a person can only detect something "out there" if there is contrast with the background (or foreground). White pelicans against a white sky would have very little contrast. Even if there is contrast, the angular size has to be large enough for the eye to detect at least a dot (otherwise it might be lost in the "noise" in an eyeball; if you think there is no such optical "noise", just go outside and stare at the bright sky for a while, preferably a uniform blue or a uniform white) . Hence the bottom line is that the pelicans must make an angular size of about 0.5 milliradians and have some contrast against the sky to be seen. If a pelican average size is 5 ft. the maximum distance is on the order 5/0.0005 = of 10,000 ft or nearly 5 miles. (Hence in my reconstruction in a previous message my use of 4 miles distance is likely an exaggeration.... BUT this is to be determined by experiment)

Not so with a specular reflector in the sun. The specular reflection can be seen a LOT farther than the mirror itself can be seen because it is reflects the sun. It is like looking at a small piece of the sun (the angular size of the reflector divided by the angular size of th sun). The contrast between the bright sky and a small piece of the sun can be huge (as anyone who has seen a reflection from a car window at a distance will know). In other words, a mirror reflection of the sun can be seen at a distance greater than the distance at which a diffuse reflector of the same size could be seen.

For those quantitatively minded here are some numbers: according to a table published many years ago in Astronomy Magazine, we can let the relative brightness of the sun (solar disc) be 10,000,000= 1E7 and the relative brightness of the sky be 1,000 = 1E3..

"Laws of visibility" generally indicate that, to be detectable, a "compact" object (like a bird or disc, but not a thin rod)

must have at least a 2% difference or contrast between its brightness and the sky brightness. Furthermore, its angular size should be about 0.5 milliradian or larger

2% contrast means the object brightness would have to be 1.02 x 1E3 = 1,020 (or if darker than the sky, 0.98 x 1000 = 980). The actual difference is 1,020 - 1,000 = 20 (or , if darker, 1,000 - 980 = 20).

Assume Arnold's eye could barely detect an object of 1/2 milliradian size, 0.0005 radian, against the bright sky. The solar disc is about 0.0085 rad in diameter. Hence the fraction of sun reflected by a mirror 0.0005 rad in diameter is (0.0005/0.0085)^2 = 3.5E-3. Multiply this by 1E7, the solar brightness, and get 3.5E4. This is the relative brightness of a mirror surface which subtends (there's a good geometric word!) 0.5 milliradians of angle.

Since the relative brightness of a white (or dark) object or 0.5 milliradian angular size against the bright sky is 20 units, the brightness of the mirror surface of the same angular size is about 3.5E4/20 = 1,730 times greater than the brightness of the white diffuse surface.

Naturally it can therefore be seen farther. How much farther? The angular size of the mirror shrinks with distance and so the fraction of the reflected solar disc shrinks as 1/r^2. To find the maximum distance, r2, at which a mirror surface could be seen, as compared to the distance r1 for a white diffuse surface, we need (r2/r1)^2 = 1,730 or r2 = 41 times r1. Thus, if a bird could be seen at 10,000 ft, a mirror could be seen at 410,000 ft (77 miles) IF THERE WERE NO ATMOSPHERIC ATTENUATION.

This calculation is not correct because there is exponential attenuation of the light in the atmosphere, so the visibility distance is determined not only be the inverse square law, but also by an attenuation law. However, the point still is valid: the mirror will be detected a lat farther than the diffuse reflector.

Back to the Arnold case: Easton has argued vociferously that pelicans, being white, can be quite bright in the sun. So he chooses as part of his data Arnold's claim that the objects were seen against the snow of Mt. Rainier, and hence must have been brighter than the snow (Mt. Rainier was 20 miles away... the atmospheric haze over this distance reduced the apparent brightness of the snow; the reflection from the HP - hypothetical pelicans - was not similarly reduced because they were within a few miles). He then OVERLOOKS, or tries to "argue away" Arnold's claim of bright flashes, because this would conflict with his PH theory.

Let's now test his hypothesis/theory (which he didn't do): (a) ASSUME Arnold first saw the pelicans when they were barely visible. That means that Arnold would not detect the pelicans until they were close enough so that the combined effects of angular size (large enough) and diffuse reflective brightness (bright enough) made them visible against the sky background. BUT... at this distance their BODIES would be visible as dots with a several percent contrast against the sky, not as bright flashes. He would not be able to initially see their shapes, however,.

Their apparent brightness would increase as they got closer, and he would see more and more details, but he would always be seeing them by diffuse reflection and they would never appear to be reflecting the sun like polished metal. He could not see them farther than the distance at which he could first see their bodies as dots (whereas objects with mirror like reflections COULD be detected at distances greater than the "dot" distance).

(b) ASSUME the pelicans got close enough to be at least "startlingly bright" before Arnold realized they were there. In this case their angular size would be quite large...they would be close....and he would likely recognize them as birds. (If the angular size isf 5 times that of the minimum angular size for detection, then the observer can generally determine shape.) Of course, they would still not flash like mirrors. But, how bright could they be? Backlit by the sun, their white feathers would probably still be only some percent greater than the sky

background, but we really have no way of knowing at this late date. What we do know, is if they were close enough to be bright that (1) Arnold should have been able to determined the shape and (b) at the very least he should have been able to turn his plane and follow them and outrun them.

Now, after this long dissertation (which I wanted to enter into the public record), back to your point.

>If it is allright for you to make assumptions, fill in the
>blanks and disregard statements that don't fit your theory, then
>why can't anyone else, including Easton?

Of course Easton can choose his data. BUT, he's got to be able to make his choices stick.....he's got to prove by using ALL POSSIBLE TESTS that his hypothesis fits the details of the sighting. His approach, like that of most skeptics, has been to pick a few details that fit his hypothesis and then argue away the others by saying they are incorrect statements on Arnold's part, or they have been interpreted incorrectly. I have no problem with this approach in principle, as long as the person can provide convincing arguments for rejecting certain data and accepting other data. Since I have no "theory" of what a UFO should be, I do not have to pick and choose data to fit a theory in the same way that Easton has to pick data to fit his PH/theory. However, whenever I pick data that I claim CONTRADICTS a theory, such as the PH, I should be able to argue why those data should not be disregarded. I have tried to do that. Naturally, if enough data can be thrown out "any" hypothesis can be satisfied. Hence we have more than half a dozen explanations proposed by people who have rejected various portions of the data

>For the record, I don't believe that what Arnold saw was
>Pelicans. My own reasoning is less than scientific; I'd simply
>like to believe what he was were UFO's.

Yes, unscientific. I would rather there be no UFOs. we've got enough to worry about already without interlopers from"out there" messing around. UFOs introduce another uncertainty into life, which is already uncertain enough (what with population growth, pollution growth, the coming "immortality" and medical bills that will make the medicare arguments of today seem like child's play)

>However, I offer this
>info regarding the "dissapearance" of the pelicans behind
>mountain peaks. I have some video that I shot of my relative's
>kids playing frisbee. On more than one occasion, the frisbee
>flatened out to the point that it "dissappeared" behind a tree
>almost a hundred feet in the distance. The effect was quite
>startling. I have no doubt this was the effect Easton was
>talking about. Considering we lose our sense of three
>dimensional perception beyond about 35 feet or so, it would be
>easy to be fooled by this effect in mid air. Just a thought.

I certainly understand what you are saying and have considered it. The argument here is that Arnold saw the objects "disappear" for short times (this is the observation) and then reported that they went behind mountain peaks (this is the interpretation). As usual the ufologist is confronted with separating the observation from the interpretation. Clealy if Arnold's interpretation were correct the PH fails. However, if one can logically and convincingly show that Arnold misinterpreted what he saw, then the PH IS NOT YET PROVED.... it has to pass other hurdles. IN other words, one detail of observation could disprove a hypothesis, but it cannot prove a hypothesis. Hence it is not sufficient (but it is necessary) to argue that the objects did not go behind mountain peaks-- that Arnold was wrong in this interpretation. But then to prove the PH one must also show that the flashing can be explained, the shapes can be explained and that the dynamics of the situation as portrayed on my map in another message (or someone else's map) can be explained.

For example, Arnold says he turned his plane and rolled down his window so there would be no glass between him and the objects, yet he still wasn't able to see aircraft-like tails on the object. If in turning the plane he chanced to fly parallel to the objects, and if they were pelicans a mile or less away, it seems reasonable to assume that he would immediately have

noticed that he was catching up with them... or passing them... but AT LEAST that he was going faster than they and not the other way around. Although Arnold didn't state explicitly which way he turned, we do know he was sitting on the left side and was therefore closest to the left window. We also (apparently) agree that the objects passed between him and Rainier so, assuming he turned AFTER they passed Rainier, it is MOST LIKELY that he turned to the right and headed south and opened the left hand window.

Easton's explanation of why Arnold failed to realize he was traveling faster has basically been to argue that Arnold did not report accurately what happened.. or that the interpretations of what Arnold did report have been wrong. Easton has recently suggested that maybe he turned to the left and opened the window on the other side of the plane so he could have a better view of the rear ends of these objects. This makes little sense, of course, since they were going so rapidly... whether pelicans of UFOs.... that all had to do was wait a little and they would be south of him and he could see their rear ends clearly.

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