

Re: Help please when you can

Larry Lemke <larrylemke@yahoo.com>
To: Richard Haines <narcap6@gmail.com>

Tue, Apr 30, 2013 at 10:46 AM

OK, I'll take a look at it.

On a different topic...

I recently posted a reply to the blogsite "UFO DNA"

(url:
)

in response to an article that appeared there by the blog owner (Luke Ford). Luke was trying to "prove" that the famous Chiles-Whitted case of 1948 was really the sighting of an earth-grazing meteor. One of the facts at issue is exactly when Chiles-Whitted claim they sighted their famous cigar-shaped UAP. It occurs to me that you are probably quite familiar with the case. If you could, I would appreciate it if you would read my post and check it for factual errors as regards the Chiles-Whitted sighting. It also occurred to me after posting this that my analysis may be appropriate to form the basis of a NARCAP technical paper.

My blog post follows:

"Luke, your analysis as presented here is based entirely (so far as I can tell) on geometry and glosses over some of the other issues attached to the case. As an aerospace engineer, a number of questions come to my mind. I wonder if you've thought about them?

The first question is timing. You have linked 4 different observations together and implicitly assume they were all part of the same event. Let's start with the pilots' observations. The two Eastern Airlines crew that were southbound from the DC area both reported sighting the luminous object at about 0230 hours. According to Edward Condon ("Scientific Study of Unidentified Flying Objects", 1968) the original Chiles and Whitted report to the USAF placed their sighting at 0245, or 15 minutes later. As a pilot, I tend to give relatively high credence to pilot reports, and I know that the air traffic control system places a lot of importance on maintaining schedule discipline. I would find no a priori reason to believe the two southbound aircrews about the time but not believe Chiles and Whitted. Do you have some information that I don't have that would resolve that conflict?

The fourth observation that you link in was, of course, the ground observer Massey at Robins AFB. He said the object flew overhead at 700 mph and 3,000 ft at some time between 0140 and 0150, local and was in sight for about 20 sec. In other words he saw the object perhaps 40 to 50 minutes before the southbound Eastern Airlines crews. You mention that the AFOSI considered this sighting to be part of the greater "Chiles-Whitted" sighting event, but how do you or how did they, reconcile the timing mismatch? Was Massey right about the sighting angles but wrong about the time? Again, do you have some information that I don't that would resolve that conflict?

Based on the agreement between the southbound Eastern Airlines flights and the Chiles-Whitted flight, you infer that the object (if, indeed it was one object) was moving on a bearing of about 220 degrees. I agree with that assessment, IF there was only a single object moving along a relatively continuous flight path. Once you assume that whatever Massey observed was one and the same as what the Eastern Airlines flight crews saw, then you have a point on the map and the slope of a line going through it, so you obviously have an approximate ground track for the object. I couldn't make out all the lettering on the graphic that you included in your analysis, but it looks like the ground track you generated was in the range of about 800 miles, from the time the southbound Eastern Airlines flights saw the object abeam their positions until the ground track crossed the Gulf Coast.

You present a conclusion at the front of your analysis that, "It was not a nearby object traveling at 700 mph half a mile away and 500 feet above the Chiles' aircraft, but a disintegrating meteor, passing 80 miles away at 90,000 feet at a speed of 18 miles/second." I'm not sure how you derived the 18 miles/second figure; perhaps you started with that result as your desired outcome and calculated backwards to get that figure? Assuming for the sake of argument that it is correct, then the object would have traversed the 800 mile track in about 45 seconds. That would have allowed BOTH the southbound Eastern Airlines crews and Chiles and Whitted to have seen the object within the same 1-minute interval.

Be that as it may, there is then the question as to what altitude (above ground level, or AGL) the object was moving at. You make the claim that:

"At the time of these two sightings, Feldvary was flying about 60 miles east of Mansfield. So clearly the object had to be a considerable distance west of both aircraft to be low on the western horizon for both of them."

That's not necessarily true. No question the object was to the west of them, but how far? If both Eastern flights were at approximately the same altitude with wings level and the object itself were approximately in the same horizontal plane, then the object would appear to be approximately on the horizon, regardless of its absolute horizontal separation distance.

But let's take your estimated ground track as representing the actual one. Again, by my eyeball estimate it looks like the object was approximately 200 miles abeam pilot Feldvary and on his horizon, when he reported the object. Due to the curvature of the earth, if the object was on his horizon, it was about 70,000 feet above his altitude. To that figure, we should add whatever Feldvary's altitude was—perhaps 20,000 feet? Coincidentally, that total (90,000 feet) happens to be exactly the same altitude that you give as the estimate for the object's altitude as it passed Chiles and Whitted, some hundreds of miles away.

So the implication is that the object was at 90,000 feet (\approx 27 km) when first seen by Feldvary and Mansfield and also at 90,000 feet when it passed Chiles and Whitted, suggesting, I suppose that it was flying at a constant altitude above the ground over that ground track.

Meteors, of course, don't do that, even earth-grazing ones. At 18 miles/second, the path that a meteor would take in passing by the earth would be, for all practical purposes, a straight line (in astrodynamics, we call that that straight line the "approach asymptote"). If you can, picture in your mind, the approach asymptote of a bolide passing by the earth at lower and lower altitudes. For reference, the orbital altitude of the International Space Station is about 250 miles (400 km, plus or minus). A space rock on an approach asymptote at Space Station altitude would whiz by the earth without even creating a visible glow and would therefore not technically qualify as being a meteor. At somewhere around 125 km altitude, the approach asymptote would just "kiss" a density level of the atmosphere where the air would start to be thick enough to cause incandescence and thus be visible (briefly) as a meteor. At this threshold altitude, there is enough atmospheric density to cause visible incandescence, but not enough to slow the original bolide very much, so it would continue on out of the atmosphere on a straight line. (People mistakenly refer to that as "skipping off the atmosphere", but it's not really doing that.) As the approach asymptote gets lower and lower, the density of the atmosphere rises exponentially with depth. By the time you get to 75 km altitude, virtually all bolides are incandescent.

Actually, it is the shock wave of compressed air standing out in front of the nose of the bolide that causes most of the incandescence. It is this exact same pressure on the nose that causes the bolide to decelerate. As the bolide decelerates, its path starts to deviate from a straight line and bends toward the earth. If the deceleration is severe enough, two things will happen; the deceleration puts inertial stresses (tending to cause breakup) in the body of the bolide and the path of the bolide bends down until it is pointing at the ground. At that point, it is no longer an earth-grazing bolide, it is an earth-intercepting bolide. Once breakup begins, it proceeds exponentially, terminating in a bright flash. You can see that the difference in altitude between when a bolide goes from earth-grazing to earth-intercepting is pretty small; most meteors breakup in the 50 to 100 km range. So, if the approach asymptote is lower than about 50 km, the meteor has a good

chance of not leaving the earth. The daylight earth-grazing 1972 event over the US and Canada had an altitude of lowest approach of about 57 km and lost about 5% of its velocity. If the approach asymptote intercepts the atmosphere at an altitude from 50 up to about 120 km (a band of about 50 km), it has a chance of being an earth-grazing bolide. If it is above that, it will not be a meteor at all. If you take the ratio of the cross section of the earth to the cross section of the 50 km thick band of atmosphere, you get the relative probability of a meteor being earth-grazing or not. My back of the envelope calculation says the probability of a visible meteor being an earth-grazer is about 1/2 of 1%. That explains why they are not seen very often. In my lifetime of 60+ years, I have seen only 1 that I am certain of.

By the way, I question whether it is true that "In 1948, earth-grazing fireballs were not recognized by science". It may well be true that nobody had a good movie recording of such an event until the 1972 event, and for that reason the general public and the PR types that the USAF had working in Blue Book might have been clueless. But I can't believe that any professional meteoriticist (such as Lincoln La Paz) would have have doubted the theory behind earth-grazing fireballs.

What this discussion is getting at, however, is that if the object that was the subject of the Chiles-Whitted UFO case was really at 27 km altitude when it was seen by Feldvary and Mansfield going southwesterly AND it was also at 27 km altitude when seen by Chiles and Whitted hundreds of miles to the south, it would have to have tunneled through the earth somewhere in between if it was moving in a straight line, as earth-grazing fireballs do. Clearly, it was not an earth-grazing fireball."

--- On Mon, 4/29/13, Richard Haines < > wrote:

From: Richard Haines < >
Subject: Help please when you can
To: "John English" < >, "Larry Lemke" < >
Date: Monday, April 29, 2013, 9:56 PM

Dear John and Larry,

NARCAP has a new Research Associate who is Richard Eaton. He is a retired helicopter pilot who lives in southern Washington state. I asked him to prepare a review of helicopters for us since some investigators might misidentify a UAP as a helicopter and vice versa. By request he has only focused on a number of "extreme" performance models; I asked him not to cover everything. Would you both be so kind as to look over his semi-final draft entitled:

"Extreme Helicopters: A Review" (2013)

that I have attached and give me your thoughts on it? My sincere thanks. We would like to publish it on our site as a Topical Review paper.

Dick

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Richard Haines <narcap6@gmail.com>
To: Larry Lemke <larrylemke@yahoo.com>
Cc: Ted Roe <ted_roe@narcap.org>
Bcc: Richard Haines <narcap6@gmail.com>, Smith Brian <brian.e.smith@nasa.gov>

Tue, Apr 30, 2013 at 11:51 AM

Hi Larry,

First, our thanks for looking over Eaton's paper.

Second, I have read your Chiles-Whitted rebuttal and have a few general comments (in no particular order):

- 1) Yes, I have a rather complete file on this historical case, two three-ring binders in fact.
- 2) From my own point of view it is an interesting and potentially useful case with some possible relevance to helping meet NARCAP's goals.
- 3) Your main argument with this person's assertion seems to hinge on altitudes and flight geometry of all objects in the air (airplanes, UAP, alleged meteor or fragmented fireball) at the time and disregards

my reply

entirely what the flight crew said they saw.

Perhaps this is just a reflection of your desire to avoid human visual perception matters and the well known limitations therein while relying on seemingly more physical data. But I might argue that even remembered "physical data" may also be in some error and therefore open to challenges. To me this is what you are doing in your challenges to this person. So why not at least keep the door open to differences between the appearance of the UAP seen by the flight crew? Thus:

a brilliant cigar-shaped object, rocket shaped craft, wingless, twice as large as a B-29 fuselage, deep blue glow on underside, two rows of windows from which bright lights glowed, 50 foot trail of orange-red flame, etc.

You could simply insert a sentence or two to this "other avenue" that supports your main thesis.

- 4) If you would like to write up a summary position on your analyses I would be most pleased to receive it. It might fit into our Topical Reviews section or our Investigator Support Paper if you gave emphasis to your methodology used. NARCAP does need to focus more on current aviation safety incidents involving UAP as you know but good historical cases can also be of value. This kind of decision is premature of course and I will await your next step. I hope my rather limited comments may be of help. like your basic geometric logic, it makes good sense. Good luck.

Dick
