# Balloon Alternative Hypothesis
# SCU Response

Alternative Hypothesis:
**Could the object in the 2013 Aguadilla Puerto Rico video be a balloon?**

**SCU Response**    *The balloon hypothesis persists on various social media sites with individuals vehemently arguing balloon(s) are the explanation. We have repeatedly asked for a scientific approach to the investigation of this video and for anyone with a possible explanation to simply provide evidence to support their hypothesis . We are more than willing to look at possible explanations and will readily post another individual's explanation of the video if a reasonable and detailed report is sent to us. As yet, none of the balloon hypothesis proponents have contacted us through the SCU website to provide the necessary data to support a balloon hypothesis . While some balloon proponents have provided descriptions or generic drawings of their hypothesis , they have been inadequate to enable duplication of their methods. If proponents would just provide the latitude/longitude coordinates at specific times for the location of the balloon, we can verify that these positions and times match the objective data. Duplication and verification on the basis of objective data is the essence of the scientific method.*

*There are several problems with a balloon being a viable explanation and these are discussed in the report on pages 43 and 44. Since the release of the report, we have been contacted by a IR technician that calibrates and repairs these very WESCAM systems for the Custom and Border Protection agency. This expert has shown the video to his fellow technicians and none of them believe the thermal signature or the movement of the object can be explained by a balloon. We have also been contacted by an engineer who works with these systems for a major government aeronautics company. He also showed it to other engineers at their location of employment and their response without us even mentioning a balloon was, "Well, one thing for sure, it's not a balloon." And they have no explanation for the object to date.*

*Using Google Earth and the on-screen telemetry, we will demonstrate "visually" why a balloon alternative hypothesis does not explain the object in the video.*

*The first step is to assume the object is a balloon and then identify the wind speeds and direction as are done on page 6 of the report. The winds are out of the E to ENE, forcing the balloon W or WSW, at a maximum speed of 18 mph up to 3200 feet elevation. We will see if we can make a balloon pushed by wind speeds fit the facts which were objectively supplied by the video telemetry and reported weather.*

*The second step is to plot the latitude/longitude coordinates of the plane and the line-of-sight direction from the aircraft. We will use Google Earth to visually render the data. The first coordinate set represents the location of the plane and the second set represents the ground behind the object in the video. We know that the balloon must be somewhere on this line-of-sight segment that is drawn in red within Figure 1. The time was 01:22:08 Zulu. Next we draw the second line-of-sight on Figure 1 in orange at the time 01:22:14 Zulu or 6 seconds later. The aircraft has moved a considerable distance to the north during those 6 seconds. We know that a balloon must move from some point along the red line over to a point along the orange line. Already it can be seen that since the wind is out of the east the orange line needs to be roughly west (to the left) of the red line. This eliminates most of the red line to the left of the intersection of the red and orange line. Still, there are plenty of possible locations on the*
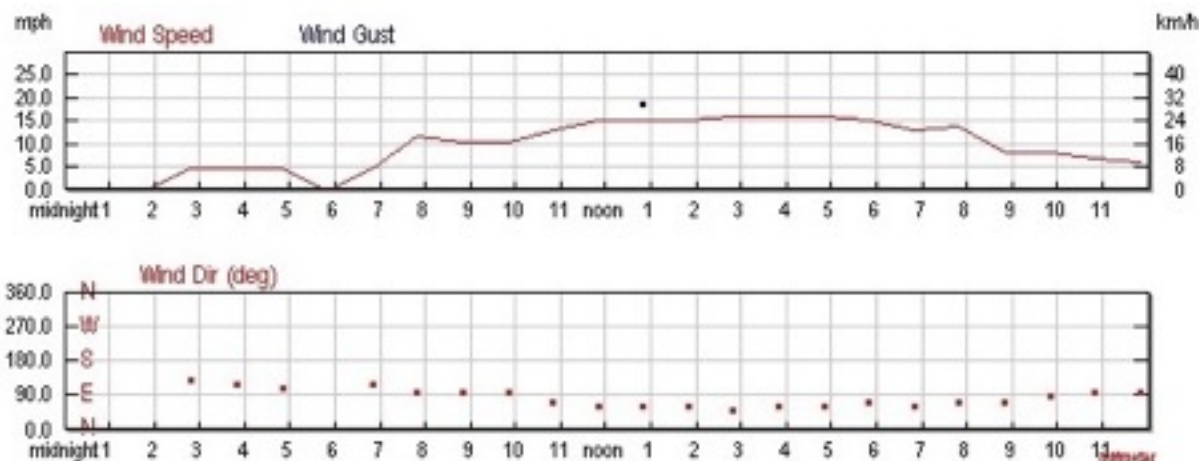
*red and orange line to fit the balloon hypothesis . This, however; is easy to draw a line between two points. That said let's add a third line.*

*We advance the aircraft's movement another six seconds and draw a third line-of-sight at 01:22:20 Zulu. This can be seen in a zoomed in Figure 2 as a yellow line. The objective now is to find a location where the wind blowing from the east could push a balloon from the red line to the orange line and finally to the yellow line. Highlighted on the red line in black is the only location on the red line where a balloon could exist so that it could move to the west and intersect both the orange and yellow line.*

*We have taken wind direction into account in our analysis but we have not yet taken speed into account. Let's take speed into account next by magnifying the Google Earth image. Figure 3 shows a close up of the area in Figure 2 that showed the balloon's possible location as a black line placed on the red line. Also seen is a distance scale in the lower left of 0 to 320 feet. We have also placed some blue balloons on the possible lines-of sight. Remember that we have six seconds of time between each line-of-sight. So how far can a balloon traveling at 25 mph move in six seconds? Only 220 feet. Can we make that fit in our model? We can definitely show that a balloon can move in a westerly direction from the red line-of-sight to the orange line-of-sight at that speed or slower. The closest point from the orange line-of-sight to the yellow line-of-sight is represented by a balloon with the notation, "Balloon must travel 567 feet in 6 seconds to get here". In other words, the balloon must travel at 64 mph to explain the object.*

*We could draw a fourth line-of-sight and so on, which only makes the balloon hypothesis harder and harder to explain. This is what someone who supports a balloon hypothesis should do in order to determine if their hypothesis can fit the information at hand. As we noted at the beginning of this response, we are glad to examine any hypothesis but they must be put down in writing with the analysis, numbers, graphs, and diagrams to back the hypothesis and allow for secondary analysis.*

As can be seen from the historical weather chart below, there is very little evidence for high speed wind gusts and large directional changes in the wind. This data comes from: http:// www.wunderground.com/history/airport/TJBQ/2013/4/25/DailyHistory.html?req_city=Aquadilla&req_state=PR&req_statename=Puerto +Rico&reqdb.zip=00604&reqdb.magic=8&reqdb.wmo=99999&MR=1
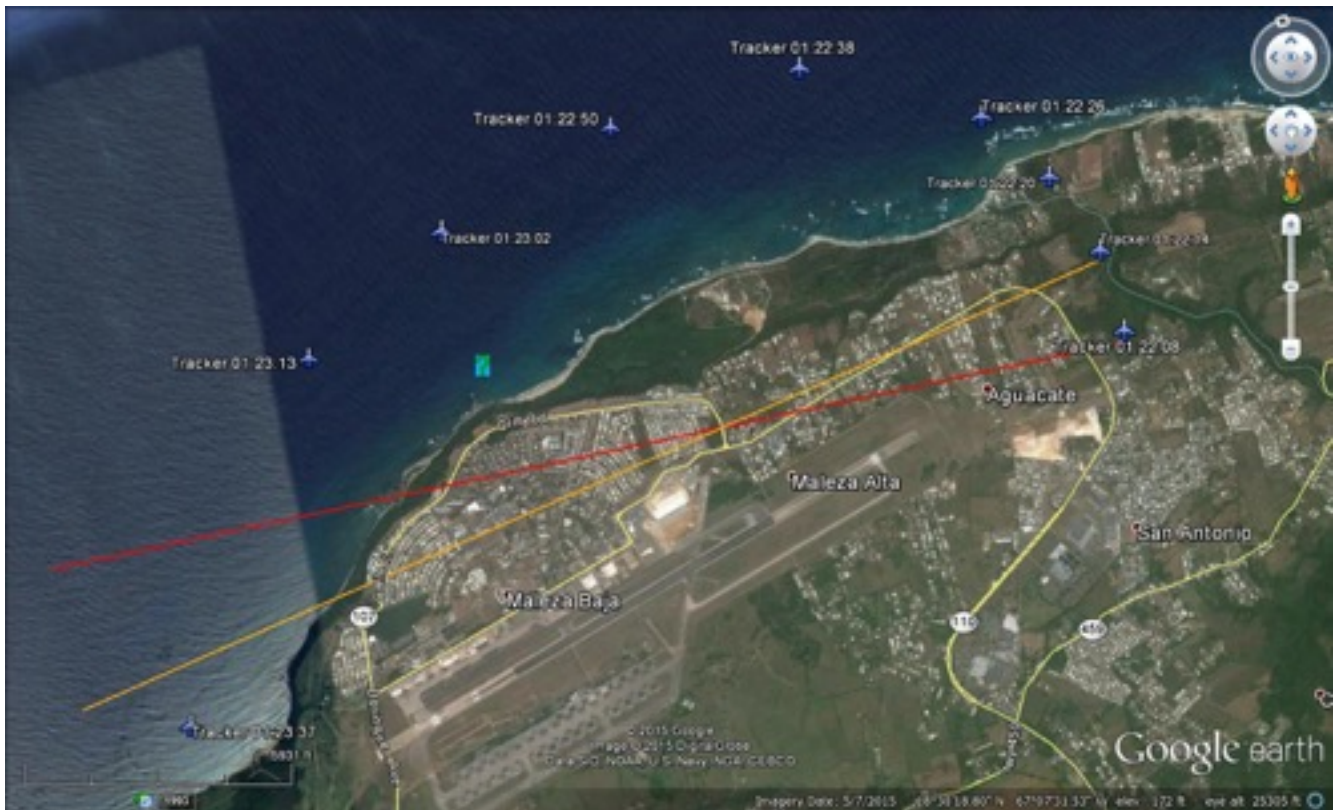
*FIGURE 1*

*FIGURE 2*

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FIGURE 3