

# Analyzing Data for a Marfa Lights Interpretation

In Occam's Razor and Marfa Lights, I wrote about comparing the fourth hypothesis of James Bunnell with the "nocturnal flying predators" hypothesis. Simplicity awarded the flying predators with victory, for "Electromagnetic Vortexes" requires too many unknown entities. Now I would like to write about data accumulated by Bunnell and included in the "B1" table of his book, *Hunting Marfa Lights*.

First, we need to come to an understanding about the potential uses of bioluminescence of large flying creatures. They are not restricted to hunting prey. Other potential uses may include courtship and protecting territory. Although some reports of *Marfa Lights* include a word like "play," it would be too speculative to deal with that possibility at present. We also need to understand that intelligent predators that hunt as a group may use more than one technique in their group hunting.

We need to understand that this predator hypothesis need not involve living pterosaurs.

We also need to understand that the cameras set up by Bunnell cover only a limited area of the plain where *Marfa Lights* are reported, and there may have been periods of time in which one or more cameras were not functioning or functioning at less than their optimum level. Within the hypothesis of bioluminescent flying predators, we need to consider these limitations.

Table "B1" of Bunnell's book is filled to the brim with data, including start times and end times for the mystery lights. Other data include "Was moon up?" and wind direction, as well as temperature, humidity, visibility, and sunset times.

For the moment, I would like to analyze one small portion of the data.

We will presume, for the moment, that a group of bioluminescent flying predators spend much of their glowing time, but not all of it, hunting one or more types of prey in different areas that include southwest Texas and possibly adjoining areas of Mexico. I say "much" because there may be occasional courtship behavior and territorial disputes in which bioluminescence is manifest.

We will also presume that this group has more than one, but not many, sleeping locations in this part of North America. At night, they may fly to a number of close areas surrounding particular sleeping areas. After a certain number of days or weeks they may move to another sleeping area, with its attendant surrounding hunting areas.

We will also presume that this group of predators have more than one hunting technique, depending not only on the kind of prey but on the conditions of the hunt. For example, bats may be hunted when they are feeding on insects in the air or when they are hibernating in a cave, necessitating a different technique for hunting the same prey.

We now notice the resulting complexity of potential behaviors and area patterns resulting from the above conditions. On any particular night, it would be unlikely that even one of Bunnell's cameras would pick up even one CE type mystery light. But we have room for at least one prediction.

Over a period of months, some of the nocturnal hunting excursions may be especially successful, even if the prey is a species of small animal like a bat, in particular the Big Brown Bat that is common in this part of Texas. This bat is "big" only when compared with other bats in this area of North America, for it is only about half a pound in weight. What can we predict after an especially successful hunt? The next night

may see those predators hunting in the same area or a nearby area. If the successful hunt were early in the evening, soon after sunset, the second night may also be early in the evening.

We now examine some of Bunnell's data for camera recordings of significant mystery light appearances from late 2000 through late 2008. About 20% of those nights involve the return of mystery lights on at least two consecutive nights, never more than three nights in succession, and only one occurrence being that maximum length. When the night-successions themselves are counted, it is only about 11%.

The following dates are in Universal Time, not Texas dates, although the sunset times are local for Texas time. Sorry if there is any confusion.

What is most important is this: 75% of those one-night successions involved starting times less than twenty minutes apart, for example one hour and nineteen minutes after sunset on May 8, 2003 and one hour and thirty-eight minutes after sunset on May 9, 2003. On July 15-16, 2006, mystery lights first appeared only about one minute apart: thirty-eight and thirty-seven minutes after sunset, respectively.

How important is that one minute difference? First I'd like to get just a bit off the subject. When Bunnell's cameras record a mystery light or lights on any particular night, it is usually after weeks or months since the last recording. An exception is the occasional one or two nights in a row of appearances. But there seems to be a total absence of 3-10 nights between appearances. That would be expected of a group of roaming predators, for they change hunting locations after one or two nights in one area, not soon returning to an area in which most of the easy prey may have already been recently caught.

Getting back to that one minute difference between July 15th

and 16th, in 2006, we now look at a typical difference in when a mystery light first appears after sunset. The average difference in first appearance after sunset, between sighting nights, those which may be as much as months apart, is two hours and thirty-six minutes, which is a lot more than one minute. This involves those night successions that were more than seven days apart, and 89% of them were. I found that about 79% of those were more than thirty minutes apart and about 93% were more than five minutes apart, with the smallest difference being one succession at three minutes apart. Turning away from those successions that were weeks apart, one minute, for the July 15-16 succession, is extremely close.

How is that July 15-16, 2006, event correlated with the bioluminescent flying predators hypothesis? On the first night, hunting was very successful, so on the second night the predators left their den a minute earlier, arriving only 37 minutes after sunset, instead of 38, to hunt in that same general area.

As stated in my previous post, "Occam's Razor and Marfa Lights," Bunnell's best hypothesis is called "Electromagnetic Vortexes." But it seems to me that it could be difficult to explain the above data with the EV hypothesis. We now look at other data, relevant to these two appearances 24 hours apart.

On the second night, the temperature at the beginning of the appearance was two degrees C. cooler than the first night. There were other differences: "Temperature Change (day high to ML Start)" and Dew Point and Humidity and wind speed were all significantly different. Why would a non-living energy, under such varied conditions, begin its appearance at almost the same time after sunset on two successive nights? "Bioluminescent flying predators" wins again.

For more information, see "Lions, Pterodactyls, and Marfa Ghost Lights."