

Occam's Razor and Marfa Lights

Occam's Razor, according to Wikipedia, "is a principle that generally recommends selecting the competing hypothesis that makes the fewest new assumptions, when the hypotheses are equal in other respects. For instance, they must both sufficiently explain available data in the first place." We will examine Occam's Razor as it relates to the short post by Richard Connelly, on the Houston Press blog: "Marfa Lights Solved!! It's A Giant Bird."

First, Connelly's post was very short, about six sentences, none of which has any reasoning. He does not reason but only makes fun of an idea, the idea that **Marfa Lights** are from bioluminescent flying creatures. He does not mention "bioluminescent" but that post must surely have been elicited by the press release "Unmasking a Flying Predator in Texas," which promotes the idea that nocturnal **glowing flying creatures** PROBABLY cause the more mysterious dancing lights around Marfa, Texas. In that press release, as I recall, the word "pterosaur" is used as a possible explanation, with a more assertive word, something like "probable," applied to a general concept of unknown bioluminescent flying predators.

Occam's Razor does not apply for two reasons, the first of which is this: From Connelly's perspective, we are not comparing hypotheses that are of generally equal value in explaining something. Previous to his exposure to this new **Marfa Lights explanation** of nocturnal predators, he probably had no idea that anybody was investigating possible bioluminescent pterosaurs living in modern times. Therefore, to him, it seemed an absurd proposition, compared to the apparent conclusion of a group of physics students who had observed car headlights near Marfa, Texas, for a few nights.

But that is a small technicality of language. The weightier matter consists of comparing how competing explanations fit characteristics of the CE-III **mystery lights** that a few scientists have observed and analyzed over a number of years. Car headlights are irrelevant here, a fact entirely overlooked by Connelly. Not all lights around Marfa, Texas, are from night mirage effects of car headlights. Any train, meteor, ranch-house light, campfire, and flashlight can appear mysterious under some conditions. Those students never came close to proving that all lights called “mysterious” around Marfa, Texas, come from car headlights.

In “Part Two” of James Bunnell’s book *Hunting Marfa Lights*, one section is labeled “What Are Chemical-Electromagnetic MLs?” (ML stands for mystery lights.) He examines four hypotheses, giving “pro” and “con” for each. I now summarize the “con” of these four, mostly in my own words. Before proceeding, keep in mind that CE-III is only one variation of Chemical-Electromagnetic mystery lights. They are the sub-type-three that travel across the countryside, above bushes but below the background mesas.

Hypothesis 1: Byproducts of Solar Storms

Solar wind is a plasma, particle streams of ionized hydrogen and helium shooting away from the sun at over a million miles per hour. Our planet’s magnetic field protects our atmosphere from this constant bombardment, fortunately, but the solar wind reshapes that magnetic field, making the sunlit side thin and the dark side of earth much deeper. Bunnell suggests that since this high altitude interaction between the earth’s magnetosphere and solar wind causes Northern Lights and Southern Lights, perhaps it might cause CE lights, or at least be part of a larger picture.

There’s a major problem with this hypothesis, recognized and explained by Bunnell: The sun’s coronal mass ejections (CME’s) do not correlate with sightings of CE mystery lights around

Marfa. I see this as an insurmountable problem.

Hypothesis 2: Plasma Descending from the Inner Van Allen Belt

This is complex, so if you're interested read *Hunting Marfa Lights*, pages 176-179. It has several problems, and Bunnell says, at the end, "This hypothesis appears unlikely to be correct." I agree, for there are too many problems with that hypothesis.

Hypothesis 3: Liberation of Pyrophoric Chemicals

Bunnell mentions that pyrophoric chemicals involve "autoignition of a single chemical whenever it comes into contact with oxygen in the atmosphere." That would seem to explain repeated on-off states of the CE Marfa Lights. He admits the serious problem that appears when we examine the type-three, however, for those mystery lights travel cross-country into the wind. Some of those flights—I say "flights" but Bunnell seems to prefer "travel"—he admits are of "long duration and long range" and involve replenishment during those long trips across country. I agree with Bunnell that this pyrophoric hypothesis "does not stretch far enough to account for the full range of observed ML behaviors."

Hypothesis 4: Electromagnetic Vortexes

To be precise, here is the heading: "MLs are electromagnetic vortexes that burn chemicals to produce light." It really requires reading Bunnell's book, pages 181-187. Perhaps this is, at present, the best non-living explanation. But Bunnell admits "this hypothesis is my speculation." Although it he believes it best fits "the entire range of Type CE characteristics," we need to keep "best fit" in context: All other non-living explanations fail.

Hypothesis #4 requires a combination of energetic vortexes and combustion of chemicals that are emitted from the ground. Both of them are speculative, yet both are necessary for this to

work. I appreciate Bunnell's research in the field and the potential that this part of southwest Texas may have for unusual geology. Of course we may yet see new discoveries involving vortexes and gas venting. But I agree with his admission that this hypothesis is speculative. I doubt that it has sufficient basis for considering it a mature hypothesis.

Applying Occam's Razor

Isaac Newton said that "we are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances." Perhaps a definition more popular to modern scientists would be something like this: "when comparing two competing theories or hypotheses that make the same predictions, the simpler one is given priority." That does not mean we should automatically flush down the loser. We simply give more time and attention to the winner.

We now apply Occam's Razor, comparing Bunnell's Hypothesis #4 with the "nocturnal flying predators" hypothesis. Both of them seem to account for the ME-III events, so let us see which is simpler.

Bunnell's H-4 requires two questionable things to interact. The bioluminescent-nocturnal-flying-predators hypothesis, "BNFP," involves a questionable element, flying creatures not classified in biology, and an unquestionable element, prey such as bats, snakes, mice, and other small living things in southwest Texas. Of course, a predator need not always be hunting. They sometimes mate and compete for mates. Some predators even play. To the best of my knowledge, these aspects of group-predator behaviors can account for all the CE-III lights and more. The simplicity award goes to BNFP.