



# ● The Comet Strike Theory That Just Won't Die

Mainstream science has done its best to debunk the notion, but a belief in a world-changing series of prehistoric impacts continues to gain momentum.

In 2007, a group of researchers, led by a nuclear physicist named Richard Firestone, announced an astonishing discovery. They had uncovered evidence, they said, that 12,900 years ago, a comet — or possibly a whole fleet of comets — struck Earth and changed the course of history. For the preceding two and a half million years, through the Pleistocene Epoch, the planet's climate fluctuated between frozen stretches, called glacials, and warm interglacials. At that time, Earth was warming again, and the ice sheets that covered much of North America, Europe and Asia were in retreat. Mammoths, steppe bison, wild horses and other enormous mammals still wandered the Americas, pursued by bands of humans wielding spears with fluted stone blades. Suddenly, somewhere over the Upper Midwest - an explosion.

Presenting their claim in the *Proceedings of the National Academy of Sciences*, a top scientific journal, the researchers took the sober tone characteristic of such publications. But in “*The Cycle of Cosmic Catastrophes*,” a book published around the same time, two of the researchers described the scene more vividly. The impact caused the ground to shake and the sky to glow, they wrote. A hail of tiny molten particles sank into flesh and set forests ablaze. Soot blotted out the sun. Earth's magnetic field wavered, and living things were bombarded by cosmic rays, confounding the navigational senses of turtles and porpoises, which beached themselves en masse. Addled birds plummeted from the sky.

Most disastrous of all, the impact shattered the ice dam holding back Lake Agassiz, a vast expanse of glacial meltwater that stretched across Manitoba, Ontario, Saskatchewan, Wisconsin and Minnesota. The lake cascaded into the Atlantic Ocean, where the freshwater pooled over the denser seawater, disrupting the convection current carrying warm water north from the tropics. The Northern Hemisphere plunged back into full-glacial cold.

For decades, scientists had puzzled over the cause of this rapid climatic reversal, which they marked by, among other things, the reappearance in southerly fossil deposits of tundra plants. These included the wildflower *Dryas integrifolia*, which gives the 1,200-year time span its name: the Younger Dryas. Here was an explanation: The impact caused the sudden cooling, the Firestone team argued,

and contributed to the demise of the mammoths, steppe bison and other large Pleistocene mammals, along with the people who pursued them.

Researchers later claimed that the Younger Dryas impact prompted a turn toward agriculture in Eurasia and eventually, civilization. It might even have influenced, in surprising ways, the outlines of our current nation-states. James Kennett, a member of the Firestone team, told me that if the impact had not led to the extinction of horses in the Americas, Native Americans surely would have domesticated them and would therefore have presented more formidable opposition to European conquistadors; perhaps they would even have been conquistadors themselves. “So the whole setup of human culture would have been very different,” he says.

Drawing out this counterfactual, we might imagine that the people of Europe came to speak a dialect of Lakota or Nahuatl or Yanomamo, that Siegfried and Roy performed with saber-toothed tigers and cave lions. Absent the climate-changing effects of agriculture and industry, the world might now be tipping back into an ice age. In short, without the Younger Dryas impact, nearly everything would be different. “Our modern way of life had its genesis,” according to the authors of “The Cycle of Cosmic Catastrophes,” “in the thunderous flash of crashing comets.”

This cometary origin story, with its mix of ancient humans, vanished megafauna and global cataclysm, quickly spread beyond the confines of scientific journals. Media outlets around the world covered the Younger Dryas impact hypothesis. It has been the subject of two more books and multiple documentaries, including one produced by PBS NOVA. Joe Rogan has discussed the hypothesis a dozen times on his podcast, and it provided the scientific underpinnings for Netflix’s 2022 hit series “Ancient Apocalypse.” But even as the hypothesis wormed its way into the public imagination, an important question persisted: Was any of it true?

Many geologists, astronomers, archaeologists, paleoecologists and other scientists with relevant expertise were immediately skeptical and soon published studies of their own rebutting the Firestone team, which responded with rebuttals to the rebuttals. While heated debate is typical in science, the back-and-forth quickly veered outside the usual bounds. Today some proponents of the impact hypothesis insist that skeptics make up a small but vocal minority desperately trying to prevent the inevitable acceptance of the hypothesis as fact. Others take a darker view, suggesting that the ongoing resistance to the hypothesis is a result of a coordinated coverup by the scientific mainstream. Still other observers hear in the stubborn persistence of the Younger Dryas impact hypothesis an echo of some unsettling trends in the public discourse: a tendency toward tribalism and distrust,

the conspiratorial embrace of supposedly forbidden knowledge, the seeming triumphs of narrative over truth.

**William Topping**, an archaeologist, was studying a site on Michigan's Upper Peninsula where ancient North Americans quarried the raw materials to make their stone tools, when he encountered a puzzle in the late 1990s: Anthropological and geological evidence indicated that the layer of soil containing the ancient artifacts dated to around 12,900 years ago, just before the start of the Younger Dryas. But radiocarbon dating suggested that the layer was only 2,900 years old. Topping sent an email about his problem to Richard Firestone, an expert on radioactive isotopes who was then working at the Lawrence Berkeley National Laboratory. Firestone, who told me that he has always had an interest in side projects, agreed to help.

Their investigation progressed slowly at first. Then, in the early 2000s, Firestone and Topping were joined by Allen West, who had recently left his career as a geophysical consultant to the oil and mining industries. "I was retired and bored," West says, so he "decided to write a book." A small asteroid had recently made headlines when it passed between Earth and the moon. His literary agent suggested he write a book about the hazard of asteroid impacts. After West came across an article that Firestone and Topping had published about their early research, he wrote to Firestone and proposed that they join forces.

The planet's surface is a churn of deposition and erosion, uplift and subsidence, which tend to erase from sight evidence of even the most consequential events. The asteroid thought to have killed off the dinosaurs some 66 million years ago, for instance, remains apparent to us primarily as a thin, iridium-rich layer of rock found around the world and as a faint inscription on the edge of the Yucatán Peninsula, where it struck. Evidence of a much earlier collision between Earth and a Mars-size body, which scientists think hewed away the material that became the moon, is even more subtle, derived from orbital models and chemical comparisons of Earth rocks and moon rocks.

Firestone, Topping and West pursued a similarly faint set of proxies. They were particularly interested in metallic spheres — so-called microspherules, each a fraction of the width of a human hair — that Topping discovered in abundance at the Michigan quarry and other archaeological sites. Topping found few of these orbs below the soil layer with the errant radiocarbon dates, and few after. But the anomalous soil, a carbon-rich layer that other archaeologists called the black mat, was full of them. The trio suspected that the orbs were a result of an impact, which, they thought, could have also reset the radiocarbon dates at the quarry site.

West began traveling the country, visiting archaeological sites that dated to the beginning of the Younger Dryas. At many of the sites he visited, he found the same black mat, containing the same types of microspherules. He reached out to other experts, and some of them joined the effort. Ted Bunch, a retired NASA chief of exobiology and an expert on meteorites, was one. Another was James Kennett, who was based at the University of California, Santa Barbara, and who had helped found the scientific field of paleo-oceanography. In 2000, he was elected to the National Academy of Sciences, “one of the highest honors that a scientist can receive,” according to the academy’s website. Kennett had studied the Younger Dryas climatic reversal for decades and even mused upon the possibility that it resulted from a cosmic impact. When West approached him, Kennett says, “I grabbed onto this immediately.”

The growing team exerted a kind of gravity, drawing other scientists into the effort: archaeologists, impact specialists, chemists, geologists, a polar explorer. Each was adept at recognizing and interpreting different kinds of scientific proxies. Led by Firestone, West and Kennett, the group put together its hypothesis the way that contractors build a house, with masons, carpenters, plumbers, electricians and drywallers each playing distinct but complementary roles. A result was a hypothesis of sweeping scope but also one that, paradoxically, West notes, was beyond the full grasp of any single scientist.

By 2007, the team was ready to publish its work. In [Proceedings of the National Academy of Sciences, Firestone, Topping, West, Kennett](#) and 22 co-authors laid out the evidence from 25 sites scattered across North America. Along with the magnetic and carbon microspherules, they had discovered granules with unusual concentrations of iridium, bits of glasslike carbon containing “nanodiamonds” and “fullerenes with ET helium.” Together, these proxies were a clear indication of extraterrestrial impact, they argued. Each reached its highest concentration in the black mat, which in turn was consistently found to be 12,900 years old — the start of the Younger Dryas.

At a news conference that several members of the Younger Dryas impact-research team gave just before the journal released its study, Kennett seemed to anticipate some of the debate to come. “I think it’s going to be very hard for the skeptics — and there will be a lot of skeptics for this, as there should be, it’s a big discovery — that there was an impact of this proportion,” he said. “It’s going to be very hard for the skeptics to take this range of evidence.”

**When the paper** came out, Jacquelyn Gill was working on her dissertation at the University of Wisconsin, Madison, studying the Pleistocene mammal populations of the Upper Midwest through the proxies of ancient pollen, charcoal and fungal

spores. The impact hypothesis almost perfectly overlapped with her research. “They’re talking about fire, they’re talking about vegetation, they’re talking about megafauna,” she says — all of it centered on the Great Lakes. But Gill, now a paleoecologist at the University of Maine, was dubious. The hypothesis depended on synchronicity, on all the various lines of evidence aligning perfectly 12,900 years ago and pointing to a sudden, disastrous event. Gill thought the Firestone team had significantly overstated this alignment, at least in regard to the impact’s purported ecological effects. In the lake cores from the Younger Dryas that she was studying, there was no abrupt spike in charcoal to suggest catastrophic fires. Pollen evidence indicated changes to the vegetation consistent with a quickly cooling climate, not an impact. The fossils of bones and the spores of dung-dwelling fungi each suggested that many large mammals were already in decline or even extinct thousands of years before the onset of the Younger Dryas; many others lingered long after. “None of this is lining up,” Gill says she thought. Other scientists reached similar conclusions. One group of researchers reported that they couldn’t find the nanodiamonds described by the Firestone team. Another group discovered no signs of a continentwide fire that coincided with the beginning of the Younger Dryas — or even a unique degree of burning at that time. Yet another group announced that, after an extensive search for microspherules and other proxies, it was “unable to reproduce any result of the Firestone et al. study” and found “no support for Younger Dryas extraterrestrial impact.” A review paper published in February 2011 summed up these efforts: Outside scientists had been unable to reproduce seven of the Firestone team’s 12 original lines of evidence for an impact; the other five lines of evidence resulted from ordinary earthly geological processes. The article was titled — in what would turn out to be wishful thinking — “The Younger Dryas Impact Hypothesis: A Requiem.”

As they tried to replicate the Firestone team’s findings, the skeptics noticed numerous odd details that seemed to hover around the hypothesis. There was, for example, “The Cycle of Cosmic Catastrophes,” which came out just before the Proceedings of the National Academy of Sciences study. The book’s publisher was a division of Inner Traditions, which, according to its website, is “devoted exclusively to the subjects of spirituality, the occult, ancient mysteries, new science, holistic health and natural medicine.” The book, written by West and Firestone, intersperses a breathless account of their work with the “astonishingly similar stories” of floods and celestial conflagrations from dozens of ancient cultures, including the tale of the “Long-Tailed-Heavenly-Climbing-Star,” attributed to the Ojibwa. “It clearly wasn’t a science book,” says Jennifer Marlon, a paleoecologist at Yale who read the book soon after seeing the PNAS study. “I just thought, Well, this is kind of silly.”

In 2011, an article by Rex Dalton in the magazine *Pacific Standard* revealed the strangest detail yet. Shortly before West first reached out to Firestone, he was convicted in California, under his given name, Allen Whitt, “for masquerading as a state-licensed geologist” while conducting groundwater surveys across the state. Not long before that, Dalton reported, a “new age” business that West owned in Sedona went under, and his geosciences business went bankrupt.

When Mark Boslough learned about West’s past — first revealed publicly in the *Pacific Standard* article, titled “Comet Theory Comes Crashing to Earth” — he says it “was kind of when a lightbulb went on over my head.” Boslough, an impact physicist at Los Alamos National Laboratory, helped pioneer the study of cosmic airbursts — meteors that explode in the atmosphere instead of striking the planet’s surface. He was skeptical of the Firestone team’s hypothesis from the beginning, but he says that he viewed them as essentially ordinary, if misguided, scientists. “Until that point, I took their evidence at face value,” he says. “I never believed that again.” To Boslough, West’s background was a sign of rot at the center of the impact hypothesis. He expected that West’s colleagues would abandon both him and the hypothesis, he says. “And the opposite happens.”

**“The Cycle of Cosmic Catastrophes”** “was never intended to be a scientific book,” Allen West says. “It’s strictly a popular attempt to talk about impacts.” The “new age” business was in fact a self-help organization, he told me. And his fraud conviction was really more of a bureaucratic mix-up, he says, resulting from his mistakenly failing to fill out the proper forms.

Indeed, not long before Dalton’s article was published, a judge revised West’s verdict to “not guilty” and expunged the conviction from his record.

West suggests that the failure of many scientists to replicate the Firestone team’s results was because of a lack of understanding, improper methodology, obstinacy or even jealousy. He points to the long history of groundbreaking scientific hypotheses meeting with initial resistance. Galileo was committed to house arrest for his public backing of heliocentricity. Darwin was engulfed in controversy after he proposed evolution by natural selection. Alfred Wegener was ridiculed in the early 1900s when he suggested that continents drift. “That doesn’t mean that everything that scientists object to is true,” West says, “but it does mean that that’s the typical response to something new.”

Some of Firestone and West’s co-authors did distance themselves from the effort, but other scientists took their places. In 2016, West and several colleagues formed Comet Research Group Inc., which, according to its website, “cooperates with and provides funding for selected impact research scientists around the world.” The organization is a division of Rising Light Group, an Arizona-based nonprofit that

“promotes public awareness and tolerance in a variety of fields, including religion, philosophy and science.” To skeptics of the impact hypothesis, this affiliation was another sign that something was amiss. But West, listed as a director of Rising Light Group, dismisses any suggestion that religion or mysticism has seeped into the scientific research on the Younger Dryas impact hypothesis. “We have scientists in our group of all kinds of religious persuasions, and to my knowledge, none of their beliefs have gotten into our papers,” he says. “Any scientist who judges the beliefs of a scientist outside of that paper, to me, that’s not good science.”

Joined by a growing cohort of collaborators, the Comet Research Group churned out new research, presenting such evidence as shock-synthesized hexagonal nanodiamonds from Santa Rosa Island, Calif.; siliceous scoria-like objects from Melrose, Pa., Blackville, S.C., and Abu Hureyra, Syria, as well as corundum, mullite, sessile and lechatelierite; elevated levels of chromium, iridium, copper, nickel and ruthenium in the sediments of western Russia’s Lake Medvedeskoye; planar deformation features, orthoclase and monazite in the northwestern Venezuelan Andes; and suggestive patterns in the eubacterial and paleosol chronosequences in the Mount Viso catchment of the Cottian Alps. What Topping and Firestone first uncovered at a single archaeological site in Michigan had expanded into, as one researcher put it, a “global cosmic catastrophe.”

These elements, minerals and geological forms are real. What many outside scientists continued to dispute was the hypothesizers’ interpretations of what these things meant. To the nonscientist, this back-and-forth is impenetrable. “It is very difficult for laypeople to assess whether something is true or not,” says Tiffany Morriveau, a social cognitive scientist at the University Paris Cité. She was part of an interdisciplinary team of experts commissioned by the European Union in the wake of the pandemic to investigate the decline of trust in experts. The group thought that, in a complicated world, there is no choice but to rely on experts. After all, everyone is a layperson in some facets of their existence. The plumber must at times place trust in the veterinarian, who at times relies on the engineer.

Looking to experts is one way that people employ what psychologists call “epistemic vigilance” — a kind of immune system for our individual conceptions of reality, allowing us to parse truth and falsehood. But this defense can be confounded in cases of contested expertise, with rows of Ph.D.s arrayed on each side, offering conflicting accounts. In such a situation, Morriveau says, a person might be tipped toward one understanding over another by how closely it aligns with previously held beliefs or political or cultural affiliations. A compelling story might make the difference.



In a recent paper, two psychologists at the University of California, Santa Barbara, Spencer [Mermelstein and Tamsin German](#), have argued that [pseudoscientific beliefs](#), which range from the relatively harmless (astrology, dowsing) to the deeply malignant (eugenics, Holocaust denial), tend to find cultural success when they hit a sweet spot of strangeness: too outlandish, and the epistemological immune system will reject it; too banal, and no one passes it on. What is most likely to take hold, Mermelstein says, is something that adds an intriguing twist to a person's current sense of the world. The idea that a comet impact shaped many details of the modern world is not just surprising and interesting, he says; it also roughly fits most people's previous understanding of Earth's geologic past. And it's simpler and more satisfying than alternative explanations for the events of the Younger Dryas. "It's just like, one big cause, one big outcome," Mermelstein says. "We can move on, right?"

**There are now many** dozens of videos about the Younger Dryas impact hypothesis on YouTube. Some YouTubers doubt the hypothesis or even try to debunk it, but many more treat it as true. In their retellings, the hypothesis takes on the sheen of legend, with new embellishments, new twists, new conclusions. Some YouTubers use the impact and its supposed connection to rapid climatic cooling to challenge the importance of modern anthropogenic contributions to climate change. Others tie the impact to biblical events. Skeptics of the hypothesis, meanwhile, swell into villains — members of the "scientific cabal," as one YouTuber describes them, or victims of groupthink.

"What's crazy is that this evidence has already existed for years but has been shunned by the mainstream scientific and academic communities," says Jimmy Corsetti, who runs the YouTube channel "Bright Insight," in one video. "They don't want to talk about it, and the reason is, is because this is people's livelihoods. A lot of people in the scientific community have become very wealthy." Reporters, too, are complicit. "The failure to properly report evidence for the Younger Dryas Impact will one day be understood as the worst intellectual crime in the history of science journalism," writes the Comet Research Group member George Howard, who describes himself as an "avocational expert" and "noncredentialed scientist," on his blog, "The Cosmic Tusk."

# **‘People are always looking for justification for their beliefs. If they can find archaeological evidence for something that happens in Genesis, brilliant.’**

In November 2022, the impact hypothesis reached its biggest stage yet, in the hit Netflix documentary series “Ancient Apocalypse.” The show is hosted by Graham Hancock, a former correspondent for The Economist who has long been devoted to exploring what he calls “historical mysteries.” In the series, Hancock argues that a Pleistocene civilization possessed surprisingly advanced capabilities, including a detailed understanding of astronomical phenomena and the ability to accurately calculate longitude, a skill not mastered until the 18th century. This civilization — whose existence is rejected by mainstream archaeologists, whom Hancock refers to as “so-called experts” — was decimated by a cataclysm. As Hancock explains in the series finale, this disaster is now known as the Younger Dryas impact. In that episode, Allen West takes Hancock into the field to see the black mat and other evidence of the impact.

Netflix has reported that viewers spent almost 25 million hours watching “Ancient Apocalypse” during the first full week of its release, ranking it among the Top 10 English-language TV shows on Netflix in 31 countries. Within days of its debut, the Society for American Archaeologists published an open letter urging the heads of Netflix to reclassify the show from “docuseries” to “science fiction,” insisting that the society’s members were not ignoring or suppressing credible evidence, as Hancock claimed. The society also argued that Hancock’s idea of an advanced ice-age civilization echoed and promoted “dangerous racist thinking.” (Hancock posted a detailed denial of these claims on his website.)

Articles rebutting (or ridiculing) the show appeared in The Guardian, Slate, The Nation and a host of other left-leaning publications. Conservative media outlets ran glowing reviews. “The propaganda press may not care about science, but they

do care about controlling the public discourse for the benefit of the political left,” a reporter wrote in *The Federalist*, in an article titled “The Lying Media Told Me Not to Watch Netflix’s ‘Ancient Apocalypse,’ So I Did.” *The Daily Caller*, the conservative website co-founded by Tucker Carlson, declared the Society for American Archaeologists an “elitist, closed-minded cabal,” linking its unchecked power to the “collapse of the American idea.” The debate over the show focused largely on Hancock’s lost civilization, including his discussion of Atlantis, which was wiped out, he said, during the Younger Dryas.

The widespread interest in the impact hypothesis outside academia can appear difficult to understand, says Tristan Sturm, a geographer at Queen’s University Belfast, who studies apocalyptic narratives and conspiracy theories. “Archaeology is not a superpopular topic,” he points out. Nor does grasping the truth about the impact hypothesis have obvious importance for the average person. But he says that it has a clear resonance with multiple cultural strains. Notably, it echoes and affirms Christian apocalyptic narratives, including that of Noah’s flood. “People are always looking for justification for their beliefs,” he says. “If they can find archaeological evidence for something that happens in Genesis, brilliant.”

More broadly, the hypothesis’ fringe status appeals to those who are experiencing what Sturm calls “conspiracism,” the reflexive distrust of authority figures, including politicians, journalists and, increasingly, scientists. A tendency toward conspiracism does not necessarily mean someone subscribes to actual conspiracy theories, Sturm says; rather, it is a gap in the epistemological immune system through which conspiracy theories enter.

About a year ago, Sturm’s colleague in the geography department, Maarten Blaauw, a paleoecologist, approached him about co-supervising a Ph.D. student who wanted to write a dissertation on the Younger Dryas impact hypothesis as a conspiracy theory. (Blaauw, who wrote a rebuttal to one early study purporting to provide evidence of the impact, says that over the past few years he has noticed that his first-year students arrive at class assuming the impact hypothesis to be true. “It’s TikTok,” he says.) Sturm stops short of calling the Younger Dryas impact hypothesis a conspiracy theory, but he says that it is an example, at least, of what he calls post-consensus: a rejection of objective truth, not dissimilar to what Kellyanne Conway, an official in the Trump administration, memorably called “alternative facts.”

When I asked Hancock to account for the success of his show, he told me: “I think a very large number of people are deeply interested in the human past and are deeply unsatisfied by the sterilized, anodyne, nuts-and-bolts, weigh-it, measure-it

and count-it version of the human past that is provided and taught by archaeology.”

He went on: “People don’t like to be told what to think. They like to have a selection of views to pick and choose from. And I just think that the views I present resonate with a large number of people.”

**Over the past** three years, the Comet Research Group has had what it considers several notable triumphs. In July 2021, Martin Sweatman, a theoretical physicist at the University of Edinburgh and a blogger (“Prehistory Decoded”), published a long paper titled “The Younger Dryas Impact Hypothesis: Review of the Impact Evidence” in the journal *Earth-Science Reviews*. He concluded that the impact was “essentially confirmed” and that the hypothesis “should now be called a ‘theory’” — in effect, placing it alongside the theories of evolution, relativity and other foundations of scientific understanding. Sweatman rejected arguments against the hypothesis. These, he wrote, stemmed from a “small cohort of researchers” whose arguments were, “in general, poorly constructed.”

Soon after that, in September, in the journal *Scientific Reports*, members of the Comet Research Group published the results of their investigation into a more recent cosmic disaster: the destruction, roughly 3,600 years ago, of Tall el-Hammam, a city in what is now Jordan. Based on an array of proxies, they concluded that Tall el-Hammam had been destroyed by the airburst of a meteorite whose power, they calculated, was approximately equal to 1,000 Hiroshima-size nuclear bombs. The dig there was led by a self-described biblical archaeologist. I first learned about the study on Drudge Report, where it ran under the headline, “Ruins of Biblical City Sodom Found?”

In 2022, Eugene Jhong, a philanthropist who was an early Google employee, donated \$1.25 million to two universities to fund the Comet Research Group’s efforts. Jhong told me by email that he learned about the impact hypothesis from one of Hancock’s books or lectures and was inspired to donate. Aided by this funding, the Comet Research Group last year published a series of papers presenting what some of its members believe to be among the best evidence yet for an impact.

In the course of publishing this work, though, members of the Comet Research Group say they have encountered signs that their opponents have moved from simply voicing skepticism to actively trying to suppress their research. Despite receiving several favorable peer reviews on a paper submitted to a scientific journal, group leaders told me, the journal’s editor summarily rejected it. In response, they started their own scientific journal, called *Airbursts and Cratering*

Impacts, whose editors include West and two other Comet Research Group members. All three assured me that submissions to the journal are peer-reviewed according to the usual best practices; so far, the journal has published six papers from the group.

While they acknowledge that the journal might appear, to some people, to be self-dealing, group members that I spoke with insisted that it was, in some cases, a necessary step toward bringing their work to the public. Malcolm LeCompte, a retired solar-system astrophysicist and one of the Comet Research Group members who edits the new journal, told me in an email that he and some of his colleagues thought that a small number of “very influential scientists” had been actively working as “Gate Keepers, to prevent our publications from being fairly reviewed.”

When we later spoke over the phone, I asked LeCompte if he could name some of these gatekeepers. He noted the longtime skepticism of Vance Holliday, an archaeologist and geologist at the University of Arizona, Tucson, and the lead author of a recent paper titled [“Comprehensive Refutation of the Younger Dryas Impact Hypothesis.”](#) But upon further reflection, he said he didn’t think Holliday deserved that label. Indeed, the Comet Research Group members I talked with only felt comfortable pointing to one publicly: Mark Boslough, the Los Alamos impact physicist, who has spent years working to refute the Younger Dryas impact hypothesis. Boslough seemed amused when I asked him about LeCompte’s characterization. But he suggested there was no organized opposition to the impact hypothesis, only a large number of unaffiliated scientists who simply remained skeptical.

For more than a year, Boslough had been keeping me apprised of his activities, which included posting rebuttals to the Comet Research Group’s papers on social media and science forums; sending letters to journal editors; and writing popular articles for *The Skeptical Inquirer* and other outlets. Last September, Boslough told me that he had gotten wind of what he said was an active inquiry that would discredit the impact hypothesis. More recently, though, he told me it could be months or even years before any results became public.

I began to wonder if, in trying to draw connections between the various oddities that swirled around the Comet Research Group, Boslough was himself falling into a kind of conspiratorial thinking. “I have indeed asked myself that question,” he told me. But after careful consideration, he had concluded that he was not.

Comet Research Group members predicted to me that skeptics like Boslough could never be persuaded, only waited out. “You know that old saying,” West told me. “‘Science advances one funeral at a time.’” During one of my conversations with him, I asked — as I did of nearly everyone I spoke with, on both sides of the issue — whether he ever harbored any doubts. Was there any kind of evidence that might convince him that he was wrong?

In a sense, what West and his collaborators think now hardly matters. The hypothesis has already penetrated deeply, and perhaps indelibly, into the public imagination, seemingly on its way to becoming less a matter of truth than a matter of personal and group identity. Nobody I spoke with seemed to think it would go away soon, if ever. West, though, took a measured view. “All we can say is this is a hypothesis,” he said. “It’s still a debate. We may be wrong; we may be right. But only time will tell.”