



The first nuclear war?

On Mars?

On Mars, the nearest Earthlike planet in the cosmos, the concentration of ^{129}Xe [xenon] in the Martian atmosphere, the evidence from ^{80}Kr [krypton] abundance of intense $10^{14}/\text{cm}^2$ flux over the Northern young part of Mars, and the detected pattern of excess abundance of Uranium and Thorium on Mars surface, relative to Mars meteorites, can be explained as due to two large thermonuclear explosions on Mars in the past.²

This is from a paper presented by J.E. Brandenburg at the AIAA Space Forum in September 2016. The American Institute of Aeronautics and Astronautics, founded in 1963, publishes technical journals, books, and the *Aerospace America* magazine; convenes annual forums, technical conferences, and design competitions for industry professionals and students; and develops and maintains national aerospace standards as an accredited body under the American National Standards Institute. It is not a New Age club.³

Yet the paper has not been well received in the scholarly community, whose members have responded with other, more “natural” explanations of the data. Also, some versions of the paper had been published in “alternative or fringe” journals, not the likes of *Nature* or *Icarus*.⁴ How could it be considered legitimate?

In the Ancient Near East?

Let’s look at another example of an extraordinary claim being swatted down.

Tall es-Hammam (Tell el-Hamam[n], Tel/Tal es-Hamam[n]) was a Middle-Bronze-Age city and is now an archeological dig site in Jordan, in the eastern part of the lower Jordan Valley

at the northern end of the Dead Sea, close to where the Jordan River enters the Dead Sea.⁵ This is the land of Sodom and Gomorrah and of the other Cities of the Plain.

A 2021 report presented evidence that ca. 1650 BCE (ca. 3600 years ago), a cosmic airburst destroyed Tall el-Hammam, leaving behind, among other residue, carbon and ash layers, melted pottery and brick, calcium carbonate spherules from melted plaster, and fragmented human skeletal remains. Temperatures have been estimated at 3,632°F (2,000°C). A related influx of salt inhibited farming and caused a 300- to 600-year-long abandonment of ca. 120 settlements within a little more than a 15.5-mile (25-kilometer) radius. Evidence at the site indicates a greater intensity from the southwest, with debris, such as bricks, being swept to the northeast. Mudbricks are almost all pulverized; none are whole.

The possible sources of the observed effects at Tall el-Hammam were compared in a table. Although the effects of the 1945 Trinity/Nagasaki blasts were very similar to those at the site undergoing excavation, the first cause to be ruled out was an “atomic” source (the word “nuclear” is not used in the main body of the text) “because of the age of the site.” It does rule out warfare (picture guys carrying swords and spears), tornadoes, and accidents because these natural disasters could not tear human beings literally to bits and could not pulverize every brick in town. That could only be done by a “high-temperature thermal pulse, followed by a hyper-velocity blast wave.” That left only one choice: natural airburst.⁶

The popular science periodicals followed suit. An article from *The Conversation* quickly eliminated volcanoes, earthquakes, and warfare for the same reasons the official report did. But an asteroid could have done it. “We had a likely culprit,” the writer concludes.⁷ Likewise, in a *Smart News* article, the writer quickly follows suit by asserting that “warfare, a fire, a volcanic eruption or an earthquake were unlikely culprits,” leaving a rock from space as the most likely cause. Other articles are similar. The same reasoning is perpetuated that the nuclear source must be ruled out because, well, it *has* to be ruled out.

A critiquing article was published, which pointed out purported methodological errors.⁸ *Scientific Reports*, which published the original article, retracted the article on April 24, 2025.⁹

The editors at *Nature*, the parent company of *Scientific Reports*, reject approximately 92% of submissions and send the other 8% off to a rigorous peer review before publication.¹⁰ Everyone missed these “errors”?

A tale of two swattings

Here we have two examples of swatting down a finding because the it *has* to be swatted down. In the case of the Xenon and Krypton readings on Mars, *perhaps* the authors made a leap to their conclusion, but did the whole study have to be retracted? Isn't that the purpose of academic discourse? Perhaps other scholars were relieved to find "flaws" in the article, so that they didn't have to deal with the potential findings.

In the case of Tell el-Hammamm, the article's author summarily dismissed the possibility of weaponry as the source of the air blast. That seals off the option from any further investigation. It can't be because it can't be.

Nuclear strike in 2024 ... BCE?

As the Sumerian civilization wound down, having played its role on the Mesopotamian stage, conflict was brewing. Marduk, an Anunnaki, was the son of Enki, who held a lifelong resentment against his brother Enlil, who had achieved supreme command by a drawing of lots. Marduk intended to achieve supreme command to avenge his father.¹¹

Marduk, with the help of his lobbyist Nabu [Nabu], was drumming up support in Canaan. The result was a fabric of tensions in the Near East that led to a war between the cities of the west and those of Sumer, the so-called War of the Kings. In 2041 BCE, Inanna (later known as Ishtar, "among the most important deities and the most important goddess in the Mesopotamian pantheon"¹²) had urged Amar-Sin (ca. 2048–2037 BCE¹³) to organize the coalition for the War of the Kings. Ca. 2024 BCE—the Year of Doom, as Sitchin calls it—was during the reign of Ib-bi-Sin (r. 2027–2004 BCE¹⁴), the last king of the third dynasty of Ur (and of Sumeria). All this occurred, Sitchin says, at ca. the end of Ib-bi-Sin's sixth year of reign (*Wars*, pp. 333ff.).

During the reign of Ib-bi-Sin, a widespread disaster occurred in Sumer that became recorded in a string of lamentations being unearthed today. The final, great Third Dynasty of Ur was falling—that seemed a certainty—and the nature of that disaster is yet to be sorted out. With that catastrophic event, Sumer became history (*Wars*, pp. 317–344).

The upheaving of the cities in Canaan—today the land of Palestine and Israel (the Levant) and, in biblical days, the Land of Israel, the Philistines, and the Phoenicians—and the involvement of the gods can only be inferred from the accounts in *Genesis* 18 (Abraham and Lot) and the Mesopotamian sources (chiefly the *Lamentations*).¹⁵

In 2023 BCE, Sitchin asserts, there was a nuclear strike in Sinai and Canaan. The prevailing westerly winds carried fallout eastward toward Sumeria, causing death among humankind and other life in the area, poisoning the water, and rendering the land unsuited for farming.

The high civilization of Sumer was leveled (*Wars*, pp. 347, 350). He cites two reasons for his claim: the blackened mountaintops of southern Sinai and frequent mentions of an “Evil Wind” in the *Lamentations*.



Figure 1 Southern Sinai from space.¹⁶

Blackened areas in Sinai

The whiteness of the limestone and the redness of the sandstone are the predominate colors in the Sinai. Gray and dark brown can be seen as natural hues but not black, normally associated with basalt. The black discoloration, he says, comes from the “millions upon millions of bits and pieces of blackened rock, strewn as by a giant hand over the whole area” (*Wars*, p. 333). A photograph on p. 332 of *Wars* (Figure 105) does show the Sinai darkened (see also Figure 1), but what caused it? Sitchin asserts that it is the result of a nuclear intervention in the conflict of that time. There has been no scientific explanation, he maintained, for the dark area in the south part of the peninsula (*Wars*, p. 331).

That was true to the extent that NASA and related agencies do not comment on it as anomalous.¹⁷

If not a nuclear strike, what *is* the cause? If Sitchin said scientists had no explanation in the 1970s, he was right. But, in a 2018 article in the *Journal of Asian Earth Sciences*, titled “Late Neoproterozoic Adakitic Lavas in the Arabian-Nubian Shield, Sinai Peninsula, Egypt,” reported that the “Sahiya and Khashabi volcano-sedimentary successions are exposed near the southern tip of the Sinai Peninsula.” The “blackened area” and its characteristics, the researchers say, were determined by archaic volcanic activity in the area (which might explain the darkened areas across the Gulf of Suez on the Arabian Peninsula).¹⁸

On the other hand, the postdiluvian Spaceport was supposed to be located in northwestern Sinai (*Wars*, p.134, Fig. 37). If the shooting fell that far to the south, that bespeaks pretty bad shooting.

The cities to the west of Sumer were also said to be destroyed (*Wars*, p. 329).

Bright flash

At the risk of serious oversimplification, a nuclear detonation unfolds as a flash, a blast, and fallout.¹⁹

Sitchin turns to the *Lament for Sumer and Ur* as his source for the “lightning flash” that he seems to have read into his interpretation of the *Lament* (Wars, p. 337). I could not relate the comment to anything in the traditional version of the *Lament*.

In addition, if the redactor of the *Lament* recorded such a flash, it would have had to be on the say-so of a witness who came from the West. The blinding flash of a large detonation or of multiple detonations could not have been visible 900 miles (1,448 kilometers) away, as Sumer is from Canaan. That would be like the residents of Omaha, Nebraska, seeing a flash at Los Alamos, New Mexico.

Blast effect

We have only the Bible’s say-so about the destruction of Sodom and Gomorrah, and, on the Mesopotamian side, only a glimpse of what might have been part of the Marduk-driven War of the Kings. But we have a plethora of accounts of coincidental follow-on devastation in Sumeria—too much to dismiss as myth. Curiously, we do not hear about any other such destruction within the “blast radius” of Canaan—Turkey, Greece, Crete, Egypt—perhaps due to distance and wind direction, and, particularly, blast effect would not extend to such outlying areas, including Sumer.

According to the Atomic Archive:

Most damage [from a nuclear detonation] comes from the explosive blast. The shock wave of air radiates outward, producing sudden changes in air pressure that can crush objects, and high winds that can knock objects down. In general, large buildings are destroyed by the change in air pressure, while people and objects such as trees and utility poles are destroyed by the wind.²⁰

However, “severe damage,” such as knocking down buildings and bridges, which takes about 50% of the energy in a nuclear detonation, is limited to a few miles. A 100 kiloton detonation at 5,000 feet (1,524 meters), for example, would cause “severe damage” for a 2-mile (3.32-kilometer) radius and “moderate damage” out to a little less than 4 miles (6.4 kilometers).²¹

Empirically, we have the experience of the Armed Forces and others at the Enewetak Atoll test site²² on October 31, 1952, at 6:30 A.M. Specifically, Edward “Ned” Barr, a young civilian observer stationed less than 100 miles from ground zero, witnessed the “bright pink

illumination” that radiated outward, then upward, turning everything red. Following that were the thunderclaps—17 of them as the blast wave bounced off the ocean surface and the stratosphere. There was fallout, which, of course, had its consequences. But the blast wave from a 10.4-megaton explosion didn’t have any effect, destructive or otherwise, at greater than 100 miles from ground zero.²³

Even at much higher payloads, we can rule out blast effect in Sumeria, some 900 miles (1,448 kilometers) to the east.

Fallout: The Evil Wind

Wind direction

Could the fallout have been blown eastward? That direction seems likely.²⁴

Today in Jerusalem, the wind is usually from the *north* September 11–November 8; from the *west* November 8–November 14 and November 30–September 11; from the *east* November 14–November 30. So for about 10 months of the year—these days—the wind is from the west, from the Mediterranean. There is good probability that any fallout created in Canaan would drift west, right over all of Sumer.²⁵

Fallout is therefore a valid suspect and is described more than once in the *Laments* (as a cloud, storm, or wind). Could the fallout have reached Sumeria, some 900 miles away? In April 1986, the fallout of the explosions at Chernobyl contaminated ca. 58,000 square miles (150,000 square kilometers) in Belarus, Russia, and Ukraine, “stretching northward of the plant site as far as 500 kilometres [310 miles]. ... Radioactive fallout [was] scattered over much of the northern hemisphere via wind and storm patterns, but the amounts dispersed were in many instances insignificant.”²⁶ So, maybe the Evil Wind could have originated with the Cities of the Plain, if the detonation or detonations were significantly greater than the explosions at Chernobyl.

In Sitchin’s translation, the calamity was “one unknown to man:/One that had never been seen before” (*Wars*, p. 336). He described death as an unseen enemy that “roams the street ... yet none can see it.” People attempted to flee but were still stricken by illness, their mouths covered in blood and experiencing cough and phlegm in their chests, spittle and foam in their mouths, a dazed condition, headache, spiritlessness (*Wars*, pp. 336–338). They couldn’t breathe and grew pale. While these symptoms may or may not be indicative of radioactive poisoning, they were caused by a cloud, which obliterated the sun during the day and blocked out the moon at night.

For an indeterminate time, there was no respite. Daily the storm returned, and daily the people lived through the nightmare again and again: “Daily the evil wind returned in the city.” But there was nothing to be done.²⁷

More than fallout?

Yet the cloud was somehow capable of destruction:

Woe is me! Enlil has handed over the city to the storm.
He has handed it over to the storm that destroys cities.
He has handed it over to the storm that destroys houses.²⁸

The *Lamentations* in Sumer all testify to a “wind,” a “storm” that brought death to everyone and everything in its path (*Wars*, pp. 334 ff.) Sitchin quotes one of the lamentations, referring to the fallout as a “storm, the Evil Wind” (*Wars*, p. 334), which is the English phrase used by other translators.

The account of physical damage prompted scholars who first came across the lamentations to translate the Mesopotamian downfall as the result of invasion by clashing Elamite and Amorite troops: “The composition bewails the destruction of Ur at the hands of the Elamites and Subarians [identified with the Hurrians from northern Mesopotamia²⁹]³⁰” (*Wars*, p. 335). Pritchard was quoting Thorkild Peter Rudolph Jacobsen (1904–1993), one of the then foremost scholars on the Ancient Near East and a specialist in Assyriology and Sumerian literature.³¹

But it seems to have been more than an invasion, particularly as the storm, the Evil Wind, was “ordered by Enlil in hate” and was followed by a run-for-cover reaction among the gods.³² The list of gods bailing out of the cities, before the wind blew in, went on and on. Also, the “evil wind” apparently was more than just wind:

The evil wind, like the rushing torrent, cannot be restrained;
The boats of the city it attacks (and) devours,
At the base of heaven it made the ... whirl; the people groan.
In front of the storm fires burned; the people groan.
To the battling storms was joined the scorching heat;
... fires burned.
The day was deprived of the rising of the bright sun, of the good *light*,
In the land the bright sun rose not, like the evening star it shone.
The night was deprived by the South Wind of its
customary feasts and banquets.³³

Such destruction, as we’ve seen, could not have been blast effects at this range.

The command

According to Sitchin, the tactical plan was “to destroy the cities where Nabu might be hiding,” the strategic objective was to deny Marduk the Spaceport, “the place from where the Great Ones ascend” (*Wars*, pp. 328–331). Based on a text called K-500 and the Khedorlaomer text (both of which are pieced together from many clay fragments and do not appear in a unified form³⁴), he identified Nergal, son of Enki, and Ninurta, son of Enlil, as the perpetrators of the attack, using the “awesome weapons.”

There is no doubt that Enlil gave the order for whatever happened. In the *Lament over the Destruction of Ur*, there is just one among the numerous mentions of Enlil as the originator of the “storm”:

Enlil called the storm—the people groan. He brought the storm of abundance away from the Land—the people groan. He brought the good storm away from Sumer—the people groan. He issued directions to the evil storm—the people groan. ... He called upon the evil gales—the people groan.³⁵

The *Lament for Sumer and Urim* gives perhaps the greatest and most coherent detail about the storm and its effects. Its narrative hints at the responsibility of Enlil and his father Anu for invasion, sickness, and a highly destructive storm that comes back daily and that eventually—again at the command of Enlil—afflicts Sumer’s enemies, Gutium and Elam.

The destruction, according to the *Lament*, was intended to “obliterate the divine plans by the order of An[u] and Enlil”³⁶ and “that Šimaški [the ancient region of Elam southeast of Babylonia (ca. 2200–1900 bce)³⁷] and Elam, the enemy, should dwell in their place”:³⁸

An[u], Enlil, Enki and Ninḫursaga have decided this as its fate.
Its fate cannot be changed. Who can overturn it?
It is the command of An[u] and Enlil. Who can oppose it?
An frightened the very dwellings of Sumer, the people were afraid.
Enlil blew an evil storm, silence lay upon the city.³⁹

And:

This is what Enlil, the shepherd of the black-headed people [as the Sumerians called themselves], did:
... Enlil then sent down Gutium from the mountains.
... The great wind of the countryside filled the countryside, it advanced before them.
... The dark time was roasted by hailstones and flames.
The bright time was wiped out by a shadow.⁴⁰

The judgment uttered by the assembly cannot be reversed.
The word of An[u] and Enlil knows no overturning.⁴¹

The “awesome weapons”

Sitchin refers to the *Erra Epic* as explaining the reason and circumstances of the conflict in which the “Ultimate Weapons”—the “Awesome Weapons”—are taken out of safekeeping and used against the cities. (Erra was a god associated with mayhem, pestilence, and political confusion who became “assimilated to Nergal.”⁴²) Suffice it to say, for our purpose here and on the basis of fragmentary information, that Nergal, Enki’s other son, broke out the “awesome weapons” that had been in safekeeping, vowing to destroy the lands, “to a dust-heap make them.” (*Wars*, pp. 325–326).⁴³

The people didn’t know what hit them, but the gods knew the cloud was the result of the attack on the Cities of the Plain. Sitchin’s translation from the *Lament for Sumer and Ur*:

An evil blast heralded the baleful storm.
An evil blast the forerunner
of the baleful storm was;
Mighty offspring, valiant sons [Ninurta and Nergal]
were the heralds of the pestilence. (*Wars*, p. 337)

Sitchin goes on (in his translations): Nergal’s “awesome weapons” emitted an immense brilliance with “awesome rays towards the four points of the earth, scorching everything like fire,” one text stated. The lamentation for Nippur recalls “the storm, in a flash of lightning created,” “a dense cloud that brings gloom,” followed by “rushing wind gusts ... a tempest that furiously scorches the heavens.” In Sitchin’s words, “Not one, but several, texts” attest to the Evil Wind. If he is referring to the various laments, that is true. It is not, however, accurate to say that the lamentation texts link the wind to any explosion “in the west,” near “the breast of the [Mediterranean] sea.” Perhaps working from texts that are inaccessible to me, he paints a picture of the detonations setting off a radioactive plume that drifted west, born by sea winds, affecting all of Sumer. Several lines regarding timing say that “Daily [a word mentioned several times] the evil wind returned in the city”⁴⁴ (*Wars*, pp. 338–339).

The wording in the *Lament for Sumer and Ur* describes symptoms of deteriorating health:

Turmoil descended upon the Land, something that no one had ever known,
something unseen, which had no name, something that could not be fathomed.
The lands were confused in their fear.
The god of the city turned away, its shepherd vanished.

The people, in their fear, breathed only with difficulty.
The storm immobilised them, the storm did not let them return.
...
Their strength ebbed away, they could not even go on their way.
...
Its people were as if drowning in a pond, they gasped for breath.
Its king breathed heavily in his own palace.⁴⁵

The *Lamentation* also describes the “dark time” being “roasted by hailstones and flames”⁴⁶ and talks about the orchards being “scorched like an oven,”⁴⁷ about houses being destroyed.⁴⁸

Truly I shed my tears before An. Truly I myself made supplication to Enlil. "Let not my city be destroyed," I implored them. "Let not Urim be destroyed," I implored them. "Let not its people perish," I implored them. But An[u] did not change that word. Enlil did not soothe my heart"⁴⁹

Forced out of their comfortable homes and cities, the patron gods bewail their loss:

Mother Ningal, like an enemy, stands outside her city. The woman laments bitterly over her devastated house. Over her devastated shrine Urim, the princess bitterly declares: "An has indeed cursed my city, my city has been destroyed before me. Enlil has indeed transformed my house, it has been smitten by pickaxes. On my ones coming from the south he hurled fire. Alas, my city has indeed been destroyed before me. On my ones coming from the highlands Enlil hurled flames. Outside the city, the outer city was destroyed before me—I shall cry "Alas, my city". Inside the city, the inner city was destroyed before me—I shall cry "Alas, my city". My houses of the outer city were destroyed—I shall cry "Alas, my houses". My houses of the inner city were destroyed—I shall cry "Alas, my houses".⁵⁰

As we’ve seen, Enlil, his wife, and the other Greater Gods were not immune to the evacuation:

[Enlil] has abandoned his cow-pen and ... the shrine Nibru and has let the breezes haunt his sheepfold. His wife Ninlil has abandoned it and has let the breezes haunt her sheepfold. ... Enki has abandoned that house [at] Eridug and has let the breezes haunt his sheepfold.⁵¹

Remorse

The *Lament for Uruk*, according to Sitchin, recounts how Anu and Enlil had overruled Enki and Ninkī on deploying the nuclear weapons, but none of the gods foresaw the horrific

outcome: “All the great gods paled at its immensity Like a great wild bull which bellows mightily, that one filled the world with its roar” [1st kirugu/chapter].

The *Lament for Sumer and Ur* adds personalized details about Ninhursag, who wept as she fled Isin (probably the mound near Ad-Dīwānīyah in southern [Iraq](#)⁵²); or Nanshe, who wailed, "O my devastated city"; or Inanna, who did not have enough time to save her valuables:

She rode away from her possessions, she went to the mountains.

She loudly sang out a lament over those untravelled mountains:

“I am queen, but I shall have to ride away from my possessions, and now I shall be a slave in those parts.”⁵³ ll. 271–273.

The *Lament* didn’t seem to say anything about sailing away to Africa in a "submersible ship," which is included in Sitchin’s interpretation (*Wars*, p. 339).

Death followed the onslaught of forces, natural and human-made: “heaven rumbled ... was darkened ... was covered by a shadow,” “the mountains roared,” “dust passed over the mountains,” “trees were uprooted,” “forest growth ripped out,” “orchards stripped,” crops “drowned” on the stalk. All the while, “The city's god left his dwelling and stood aside.” “There were corpses floating in the Euphrates, weapons smashed heads.”⁵⁴ Water sources ran dry, the land was scorched, wildlife and livestock ran free, priests and priestesses were carried off to enemy lands.

The Gutians and Elamites carved out tracts of Sumerian land and scorched the Earth. “The province of Lagaš was handed over to Elam”⁵⁵ “[The Gutians’] advance was as the flood of Enlil that cannot be withstood. ... The extensive countryside was destroyed, no one moved about there.”⁵⁶

Famine

Enlil is also blamed for the follow-on famine, which apparently not even the king escaped. When the monarch went to the “platform” for his meal delivery, he found nothing there!

Enlil afflicted the city with an evil famine.

...

Its people, like fish being grabbed in a pond, sought to escape.

Its young and old lay spread about, no one could rise.

At the royal station (?) there was no food on top of the platform (?).

The king who used to eat marvellous food grabbed at a mere ration.⁵⁷

The End

Until finally, Suen pleads with his father Enlil: “O Father Enlil, the fate that you have decreed cannot be explained” (line 457). In response, Enlil reinstates the gods to their cities and promises a return to past peace and comfort. Enlil issues the commands:

O bitter storm, retreat, O storm, storm return to your home.

O storm that destroys cities, retreat, O storm, storm return to your home.

O storm that destroys houses, retreat, O storm, storm return to your home.

Indeed the storm that blew on Sumer, blew also on the foreign lands.

...

It has blown on Tidnum, it has blown on the foreign lands.

It has blown on Gutium, it has blown on the foreign lands.

It has blown on Anšan [a city in Persia⁵⁸], it has blown on the foreign lands.

...

Famine has overwhelmed the evildoer; those people will have to submit.⁵⁹

Apparently, that was that. Presumably Anu had either acquiesced to Enlil or had issued the order in consultation with his son. Enlil put the official “stamp” on the edict:

May An[u] not change the divine powers of heaven, the divine plans for treating the people with justice.

May An not change the decisions and judgments to lead the people properly.

To travel on the roads of the Land: may An not change it.

May An and Enlil not change it, may An not change it.

May Enki and Ninmah not change it, may An not change it.⁶⁰

Residual radioactivity

A tantalizing clue is hidden far below the Earth’s surface around the Dead Sea. One of the main reasons for Jericho’s being populated, built up, abandoned, repopulated, and built up again was the abundant water supply from the nearby springs—water enough to support an expanding population.⁶¹ Ironically, a 2009 article in *Environmental Science & Technology* on groundwater in the Middle East reported findings that “raise concerns about the safety of this and similar nonrenewable groundwater reservoirs, exacerbating the already severe water crisis in the Middle East.”⁶² The tests were conducted on what is known as fossil groundwater, that is, water in the ground that hasn’t seen the light of day for 10,000–12,000 or more years. You might consider it a pristine source of water in a water-deprived world, but it ain’t necessarily so. Fossil groundwater is subject to contamination from surface sources.⁶³ Research reported by S. Jasechko and colleagues in 2017 indicated, “Water

percolating from the surface into underground aquifers can carry pollutants such as pesticides and salt along for the ride.”⁶⁴

It seems radioactive contaminants can also percolate through the soil with groundwater. A recent study tested fossil groundwater for two elements: (1) Carbon-14, which can be carried down with “leakages” of modern-day water; it decays very slowly, so if it appears only at low levels in the groundwater, the groundwater is old. (2) Tritium, a heavy form of hydrogen, decays very rapidly. If it somehow contaminated the fossil water from nuclear testing in the 1950s–1960s, that suggests that the fossil water has been recently contaminated.⁶⁵ Since neither Israel nor Jordan is known to have conducted nuclear testing within the locale of the Middle East (even though Israel is suspected of having a handsome arsenal of 80–400 warheads),⁶⁶ if there is evidence of radioactivity in the local fossil groundwater, it can’t be from the 1950s–1960s. It has to be older.

Jordan, undergoing long-term drought in the Middle East, has overpumped its aquifers, which consequently are becoming salinized, and the country has turned to fossil water sources. In 2007, the government initiated a \$600 million effort to pump fossil groundwater from its Disi aquifer, which is located along the southern border with Saudi Arabia.⁶⁷ It turns out that the water, which the Saudis have been pumping out of the ground for a some time, is about 200 times more radioactive than the U.S. Environmental Protection Agency deems fit for human consumption. “It’s water you don’t want to drink,” Avner Vengosh, lead author of the 2009 report, has stated.⁶⁸

So what does that have to do with nuclear detonations? “Radioactive materials which occur naturally and where human activities increase the exposure of people to ionising radiation are known by the acronym 'NORM [naturally occurring radioactive materials],” says the World Nuclear Association,⁶⁹ for example, naturally occurring radium, which the research has concentrated. The U.S. Environmental Protection Agency (EPA) defines technologically enhanced naturally occurring radioactive materials (TENORM), which are “naturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities such as manufacturing, mineral extraction, or water processing.”⁷⁰

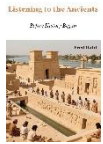
The EPA does not include nuclear testing (fission) as a “human activity” that might “enhance” naturally occurring radioactive materials. Yet:

Radionuclides are produced as an unavoidable result of nuclear fission and thermonuclear explosions. The process of nuclear fission creates a wide range of fission products, most of which are radionuclides. Further radionuclides can be

created from irradiation of the nuclear fuel ... and of the surrounding structures, yielding activation products.⁷¹

Most fission products are not radioactive for very long, but some are very long-lived. The contribution to radiotoxicity from nuclear fission drops within about 600 years with the stabilization of the short- and medium-lived radionuclides, leaving the long-lived products, which represent about a thousandth of the expired products. With half-lives measured in hundreds of thousands of years, they hang around for a very long time. The sticking point is that their radioactivity drops dramatically in those 500–600 years to hard-to-detect levels.

At 4,000 years or so since the presumed fission event in the Cities of the Plain, however, we have abnormally high levels of radioactivity in the Jordan fossil water aquifer. (And the United States still has a concrete cap over the testing blast site in Enewetak Atoll more than 70 years later.) Were the Jordanian researchers conducting routine testing for likely contaminants, or were they looking for radioactivity from any sources? The report seems to indicate that the testing was routine.⁷² What would it take for more sensitive testing to be done in order to identify the *sources* of the abnormally high levels?



For a fuller account of the *Lamentations*, see [*Listening to the Ancients: Before History Began*](#).

Takeaway

Something happened to Sumer at the end of its time on the world stage. As we've seen, according to the *Lamentations*:

- It was by command of one “god”—Enlil, the supreme “god.”
- “Awesome weapons” are said to have been used.
- The cities of Sumer were subjected to an Evil Wind, that came every day and did some physical damage, but their infrastructure remained relatively intact. It wasn't “totaled” like the structures at Tall es-Hammam.
- The people of Sumer were afflicted with strange medical symptoms, but seemingly not the kinds of injuries that come of blast or fallout.
- The Elamites and Gutians invaded the cities or at least raided and plundered them.
- The gods of Sumer got out of town.

The argument for the destruction of the five Cities of the Plain in Canaan might become somewhat more tenable if we can ever sit down with unified translations of Sitchin's key

sources: CT-xvi-44/46, the *Khedorlaomer Text* (Spartoli tablet), and K.500. If we don't—yet—have conclusive evidence of actual nuclear strikes in the Near East (other than the biblical account in *Genesis*) as a result of the War of the Kings, we do have remarkably graphic documentation and archeological clues regarding the catastrophe in Sumer.

In the meantime, in 1953, Thorkild Jacobsen wrote:

Whether we shall ever see with full clarity what happened in those years, only time will tell; the full story, we are convinced, is still far beyond our grasp.⁷³ (*Wars*, p. 335)

Three-quarters of a century later, it still is.

Notes

¹ [Bikini Atoll, Operation Castle](#). Public domain.

² J.E. Brandenburg, “Evidence of a Massive Thermonuclear Explosions on Mars in the Past: The Cydonian Hypothesis and Fermi’s Paradox,” paper presented at the AIAA (American Institute of Aeronautics and Astronautics) Space Forum, 13–16 September 2016.

³ American Institute of Aeronautics and Astronautics (AIAA). <https://aiaa.org/>

⁴ AI response to “How has the paper ‘Evidence of a Massive Thermonuclear Explosions on Mars in the Past: The Cydonian Hypothesis and Fermi’s Paradox,’ been accepted in the scholarly community?”

⁵ “Tall es-Hammam,” Biblical Archeology Society, January 23–March 3, 2020. <https://www.biblicalarchaeology.org/dig/tall-el-hammam-2/>

⁶ Ted E. Bunch, Malcolm A. LeCompte, A. Victor Adedeji, James H. Wittke, T. David Burleigh, Robert E. Hermes, Charles Mooney, Dale Batchelor, Wendy S. Wolbach, Joel Kathan, Gunther Kletetschka, Mark C. L. Patterson, Edward C. Swindel, Timothy Witwer, George A. Howard, Siddhartha Mitra, Christopher R. Moore, Kurt Langworthy, James P. Kennett, Allen West, and Phillip J. Silvia, “A Tunguska Sized Airburst Destroyed Tall el-Hamman, a Middle Bronze Age City in the Jordan Valley near the Dead Sea,” *Scientific Reports*, 11, Article number: 18632 (2021), <https://www.nature.com/articles/s41598-021-97778-3>

⁷ Christopher R. Moore, “A Giant Space Rock Demolished an Ancient Middle Eastern City and Everyone in It—Possibly Inspiring the Biblical Story of Sodom,” *The Conversation*, September 20, 2021, <https://theconversation.com/a-giant-space-rock-demolished-an-ancient-middle-eastern-city-and-everyone-in-it-possibly-inspiring-the-biblical-story-of-sodom-167678>

⁸ Steven J. Jaret and R. Scott Harris, “No mineralogic or geochemical evidence of impact at Tall el-Hammam, a Middle Bronze Age city in the Jordan Valley near the Dead Sea,” *Nature: Scientific Reports*, March 25, 2022.

⁹ Ted E. Bunch et al., “Retraction Note: A Tunguska Sized Airburst Destroyed Tall el-Hammam, a Middle Bronze Age City in the Jordan Valley near the Dead Sea,” *Scientific Reports*, April 24, 2025; see also Livia Gershon, “Journal Nature Retracts Study About Ancient City’s Destruction Linked to Biblical Story of Sodom,” *Smithsonian Magazine*, September 22, 2021, <https://www.smithsonianmag.com/smart-news/destruction-of-city-by-space-rock-may-have-inspired-biblical-story-of-sodom-180978734/>

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¹¹ For more on this feud, see Fred Dahl, *Listening to the Ancients: Before History Began* (Chester, NY: Inkwell Publishing, 2026), pp. 165ff.

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