

New Classification Raises Fresh Questions About 3I/ATLAS Amid Cyanide Reports

The unusual interstellar object known as 3I/ATLAS continues to spark global attention as new data, media headlines and scientific analysis converge around its behavior, composition and trajectory.

The object, which passed Earth at a distance of roughly 170 million miles on Dec. 19, has been at the center of speculation ranging from natural comet activity to far more exotic possibilities. At the center of that discussion is Avi Loeb, the Harvard astrophysicist who developed the Loeb Classification Scale to assess the likelihood that interstellar objects are of technological origin.

While Loeb has consistently stated that 3I/ATLAS is most likely natural, he has also stressed that a growing list of anomalies warrants continued scrutiny.

What the Loeb Scale Says About 3I/ATLAS

The Loeb Classification Scale ranks interstellar objects from 0 (a natural icy body such as a comet or asteroid) to 10 (confirmed extraterrestrial technology that could pose a threat to humanity).

Shortly after 3I/ATLAS was discovered in July 2025, Loeb assigned it a rank of 4, a designation that places it firmly in the likely natural category while acknowledging unresolved anomalies.

"3I/ATLAS is most likely a comet of natural origin, but there are eight anomalies that endow it with a rank of 4 on the Loeb scale," Loeb previously said in response to a reporter's

question.

Since then, Loeb has noted that the number of anomalies has increased from eight to 15, reinforcing his argument that the object deserves careful observation rather than dismissal.

Media Headlines vs. Scientific Consistency

Recent headlines following a NewsNation interview suggested Loeb had walked back earlier speculation. He rejected that framing, saying his position has remained unchanged since the object's discovery.

"I repeated what I said before, that 3I/ATLAS is most likely a natural object," Loeb explained, emphasizing that this conclusion appeared in peer-reviewed research and essays as early as July 2025.

"The real update will come as a result of the analysis of new data in the coming months," he wrote, adding, "Science is done in a more reliable fashion than the quality of news reports."

Cyanide, Green Glow and Toxic Fears

Public concern intensified after reports that 3I/ATLAS emitted a green glow as it approached the Sun, a feature associated with cyanide compounds in cometary gas plumes.

"Will any of the material shed by 3I/ATLAS arrive on Earth?" Loeb asked in a Medium post cited by the New York Post.

He acknowledged that the plume was known to "contain cyanide

and hydrogen cyanide,” noting that “hydrogen cyanide at large concentrations is a poison,” a gas historically used as a chemical weapon during World War I.

Observations with the Atacama Large Millimeter/submillimeter Array (ALMA) confirmed the presence of methanol and hydrogen cyanide in the object’s emission.

Why Earth Is Not in Danger

Despite the dramatic framing, Loeb concluded that Earth faces no threat from toxic fallout.

“Given the mass loss rate measured by the Webb Space Telescope, the gas around 3I/ATLAS would be swept up by the solar wind at a distance of just a few million kilometers,” he wrote.

Data from the James Webb Space Telescope showed that solar wind pressure would disperse any potentially hazardous gas long before it could reach Earth.

Loeb added that microscopic dust particles would be driven away by solar radiation, whereas larger fragments would burn up in the atmosphere if they were less than 3 feet in size.

“Given the mass loss rate of 3I/ATLAS, there are less than a million of these large objects released in recent months,” he wrote, adding that “the closest among them will never get closer than ten times the Earth’s radius.”

The Technological Caveat

Even so, Loeb has deliberately left one door open.

“The outcome could be different if said projectiles can maneuver by technological propulsion,” he noted, stressing that this remains a hypothetical scenario rather than a claim.

Loeb has previously pointed to 3I/ATLAS’ unusual trajectory as

a reason not to rule out non-natural explanations entirely. He has speculated that the object could be dispatching probes toward Jupiter, which it will approach on March 16, 2026, possibly to collect data.

What Comes Next

Loeb says the most revealing evidence may come from analyzing the object's anti-tail jet, which stretches more than a million kilometers toward the Sun.

Measuring the jet's speed and composition could distinguish between natural ice sublimation and a technological exhaust system. Natural jets would contain CO₂, CO and H₂O moving at hundreds of meters per second. A technological origin, he said, could produce exhaust speeds that are orders of magnitude higher.

Until that data is fully analyzed, Loeb says his position remains steady.

"Nothing has fundamentally changed about my standpoint as of yet," he wrote. "Stay tuned."

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