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# Avi Loeb, the professor who believes in aliens: 'Who are they to tell me I'm not practising science?'

He's been criticised by his peers, but Loeb's Harvard credentials make him difficult to dismiss as a crank

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By Ed Cumming

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Avi Loeb has a CV any academic would envy. He is the Frank B. Baird Jr. Professor of Science at Harvard, with more than 1,000 published research papers and a series of prestigious chairmanships. But in recent years, Dr Loeb, 61, has burst out of academia by arguing that some extraterrestrial objects might be proof of alien intelligence.

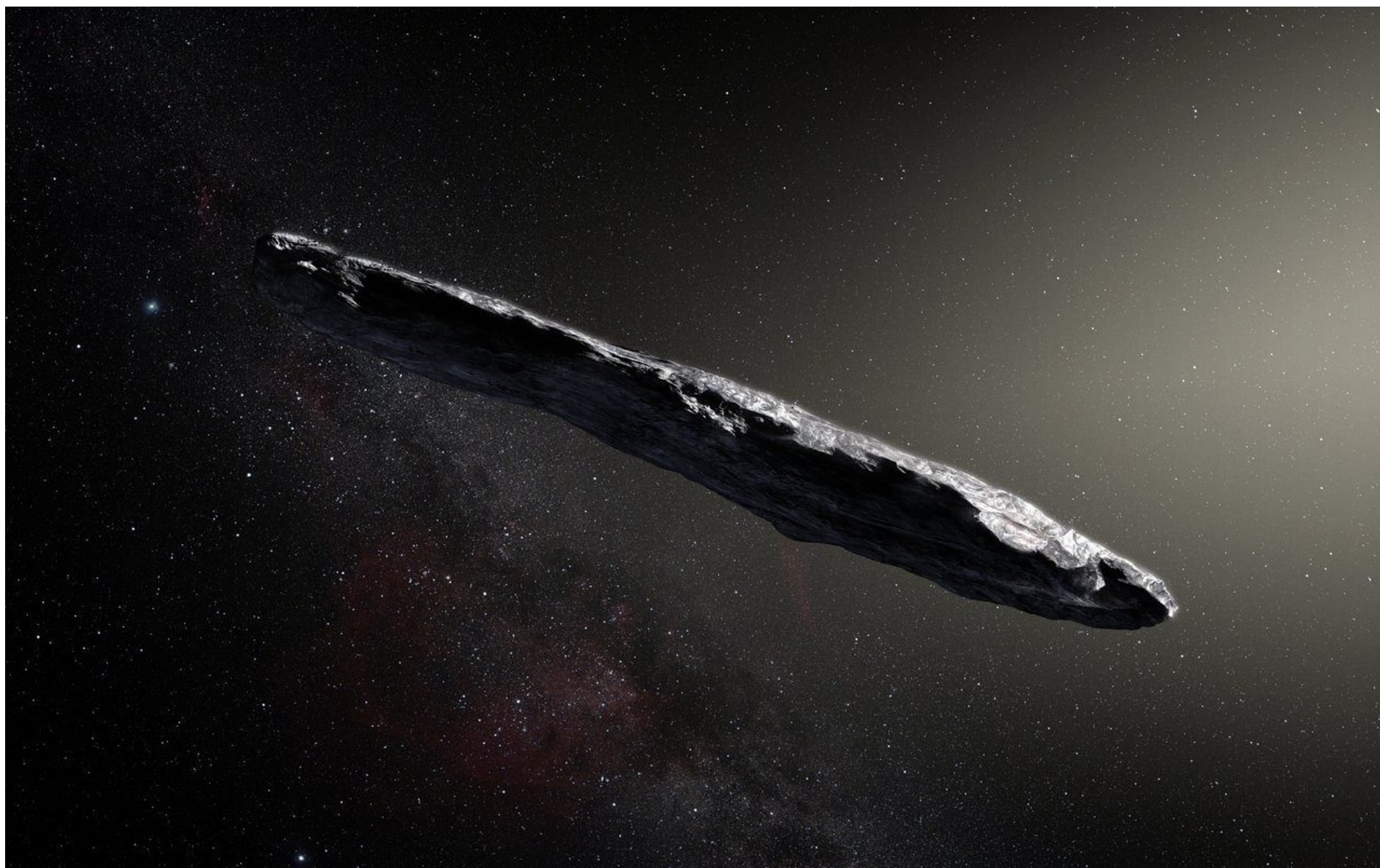
His 2021 bestseller, *Extraterrestrial*, argued that Oumuamua, a mysterious object spotted by a telescope in Hawaii in 2017, “must have been designed, built and launched by extraterrestrial intelligence.” His new book focuses on another object, a meteorite that broke up over the South Pacific in 2014. He believes his analysis proves that it, too, is evidence of alien minds at work.

Loeb's views have made him both a figurehead for believers, and a pariah among many in his field. But when we meet over Zoom from his office in Massachusetts, he is unwavering.

“Many of my critics are bloggers, or popularisers of science,” he says. “They haven’t written a single scientific paper. I’ve written more than 1,000. It’s similar to commentators telling football players how to pass the ball. How dare they? Who are they to tell me I’m not practising science?”

It’s true that his recent work has been an unexpected late twist in a career that had until then had proceeded on traditional lines. Having grown up on a farm in Israel, Loeb fell into physics by mistake because it was the only academic option during his mandatory military service. He then joined the Hebrew University, before moving to Princeton and then Harvard, with research focusing on black holes and exoplanets (planets beyond our solar system).

Two things happened to bring about this change of direction. The first was the discovery of Oumuamua, an unusually thin object that was observed heading away from the Sun and determined to have originated from outside the solar system. The only explanation for its unusual shape and behaviour, he argued, was that it was a sail, using solar radiation instead of wind. (Oumuamua is Hawaiian for “scout”.)



An artist's impression of 'Oumuamua', the cigar-shaped object | CREDIT: ESO/M. Kornmesser

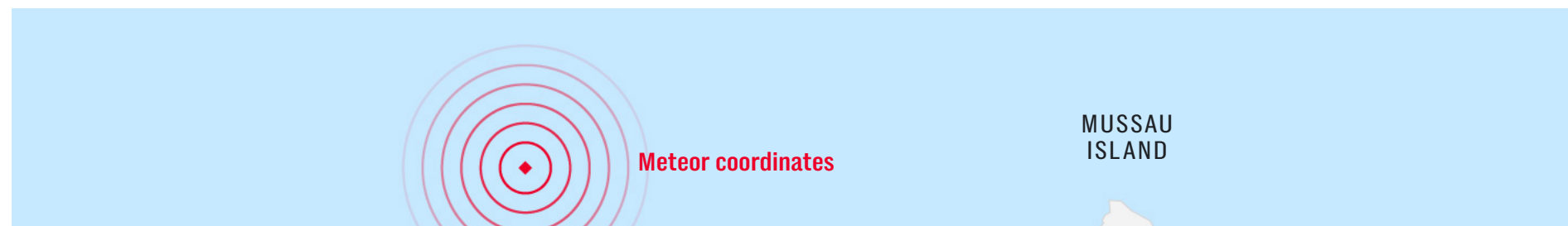
The other was the death of his parents. “When my parents passed, I realised that we

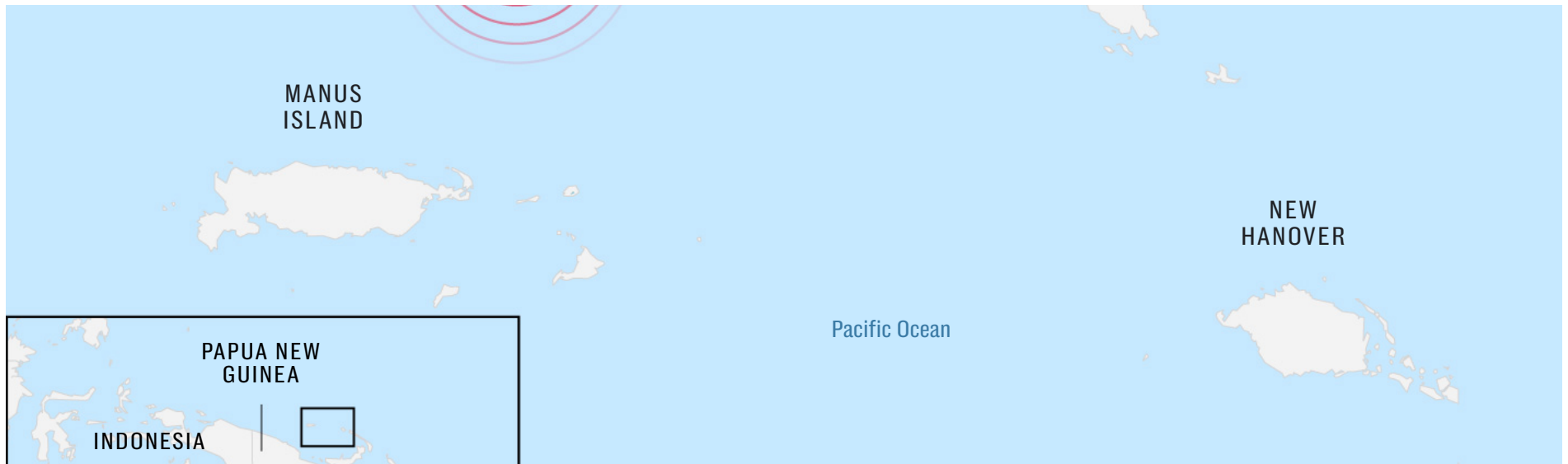
have a very limited time on this Earth, and we'd better focus on substance and not on pleasing each other and what other people want," he says.

His work has coincided with a renewed interest in UFOs, thanks to the US Congress holding official hearings on the subject for the first time. In July 2021, Loeb founded The Galileo Project for the "systematic scientific search for evidence of extraterrestrial technological artefacts" and the expedition to examine remains of the meteorite that exploded over the Pacific Ocean took place in June this year.

Loeb announced last month that an early analysis of fragments of the IM1 meteorite suggested it may have an extraterrestrial origin, making it the first ever discovery of material "originating from outside the solar system".

He also declared that the speed and angle with which the meteorite descended to Earth, plus the composition of the small metallic objects, or spherules, uncovered from the seafloor were evidence it was crafted by intelligent minds. His new book, Interstellar, details this investigation.





The work has already been criticised by fellow scientists, who say that there is no solid evidence of alien intelligence. Steve Desch, an Arizona State University astrophysicist, recently told The New York Times: “So many of my colleagues would just prefer to ignore him until he makes an a-- of himself and goes away, but he has a high threshold for shame.”

For Loeb, such scepticism is small-minded. He points out that other fields, like the hunt for dark matter, or string theory or experimental particle physics, have also struggled to produce concrete proof of their ideas, but that does not deter governments and other institutions from spending large amounts of money on looking for them.





The Green Bank radio telescope in West Virginia, used to track the 'Oumuamua' | CREDIT: NRAO/AUI

Loeb is unusual in being prepared to entertain the possibility that aliens have already visited us, but the idea of extraterrestrial intelligence has been seriously considered by scientists for decades, especially as our understanding of the size of the universe has increased. There are thought to be several billion Earth-like planets in the Milky Way.

increased. There are thought to be several billion Earth-like planets in the Milky Way alone, many of which ought to have provided the conditions for life. This is at the heart of the Fermi Paradox: if life is out there, why haven't we met anyone yet?

"I think [the Fermi Paradox] is a lazy proposition," he says. "It's like a single person standing at home and saying 'I don't see anyone around me, therefore there is nobody out there.'" For Loeb, the five probes we have sent out of the solar system, and our searches for radio and other signals, represent nothing more than a cursory look. "When Elon Musk says he's not seen any evidence for aliens, he just looks around near the Earth and the Sun. It's like an ant looking at the head of a pin and making assumptions about a distant planet.

"I know that Professor Brian Cox keeps saying there's nobody out there, that we're special and unique, but he's never searched for it," he adds. "It's presumptuous to make a statement about something without being engaged in the work trying to find it."

Musk has been a great supporter of space, through his SpaceX company, StarLink satellites and repeated statements on the subject. Does Loeb support him? "I admire his ambition," he says. "But at the moment he is making money from communication satellites and competition between nations, which is about pride and technological superiority. I think our main drive should be curiosity."





Loeb's latest research focuses on an asteroid which exploded over the Pacific in 2014, on an orbit that suggested it had come from outside the solar system | CREDIT: Jake Belcher for The Telegraph

For all his interest in aliens, Loeb has little time for most science fiction, which refuses to obey the laws of physics. By coincidence, it's the 30th anniversary of the X-Files a few

days after we speak, and many tech entrepreneurs, including Jeff Bezos, have spoken about being inspired by Star Trek.

“For me, it’s more about using the laws of physics to figure out what reality entails, looking for things beyond Earth,” Loeb says.

Were his wishes to come true, and we had hard proof of extraterrestrial intelligence, what does he think it would mean?

“A lot of people say it would be psychologically very difficult for society to accept that we have a neighbour, especially if the neighbour was more advanced,” he says. “That would be a blow to our ego. But people would adapt.”

In fact, Loeb says such a discovery could be a welcome “wake-up call”.

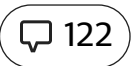
“The message would be that we are all in the same boat, humans. The boat is the earth that is sailing through space, and we had better work together for the success of our mission, rather than engaging in conflicts.

“We are so fragile. Our life is short, we live on a rock that happened to be left over from the formation of the sun. It’s a bit miserable. Oscar Wilde said we’re all in the gutter but some of us are looking at the stars. I want to be the one looking at the stars. It’s not about what’s on this rock. It’s more about what’s out there.”

If proving the existence of extraterrestrial intelligence could end fighting on Earth, in other words, then it's worth Avi Loeb having a few battles while he is still around.

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