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UFOs OR ENEMY SPIES?

The Government Confirms UFO Sightings for the First Time

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UFOs OR ENEMY SPIES?

The Government Confirms UFO Sightings for the First Time

Harvard Professor **Avi Loeb** on UFOs and Our Solar System

By Yossi Krausz

In much of the developed world these days, looking up towards the night sky isn't as rewarding as it should be. Ambient light has made the stars dimly visible, if at all, and the experience is one of looking up at pinpricks in a dome illuminated by streetlights, even when city lights are hundreds of miles away.

But drive out far into the few remaining places that are not entirely beset by light pollution and stare out into the dark void of space, and you'll feel a vertigo unlike any other on earth. We stand, with our feet on this round globe and our heads up towards an incomprehensible vastness.

That view, from our puniness into the cosmos, has made countless people over the centuries wonder what is out there. And not just what, but who. Looking up towards the stars, people have questioned whether there are other lifeforms, on other worlds, among the galaxies.

To some, the answer to that is an emphatic yes. They believe that not only is there life out there, but it also has visited us.

They base those beliefs on sightings, stories and rumors—the kind that those of us who aren't UFO believers tend to dismiss.

Can there be aliens? Rav Aryeh Kaplan argues in a famous essay that the idea isn't anti-Torah. But we probably would want some proof.

However, in recent years, reports of unidentified flying objects, or unidentified aerial phenomena (UAP)—as they are now known—have moved from the realm of conspiracy theories to open acknowledgment by the US government. Respected Harvard astronomer Avi Loeb argued that a space rock that flew through our solar system in 2017 was actually an object sent by an alien civilization. And just this past week, the Pentagon admitted that new photos and videos leaked to UFO websites were really taken by Navy aviators. That gradual shift has changed the subject from something for fringe conspiracy theorists to a topic for mainstream newspapers.

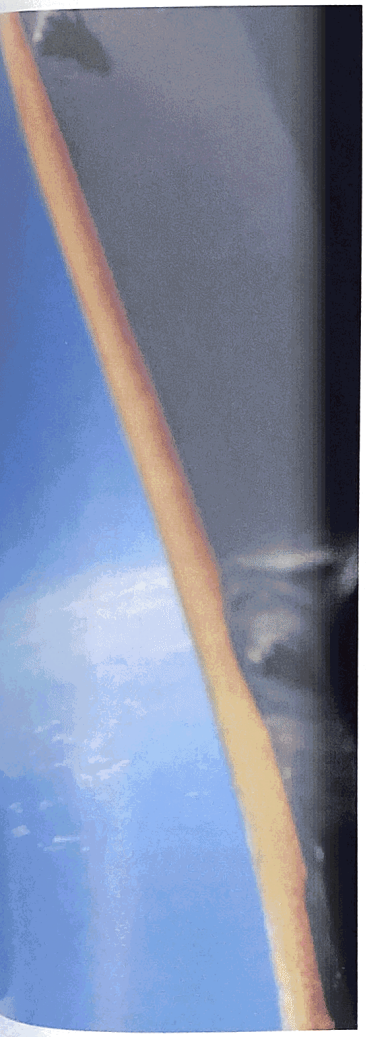
The unidentified aerial phenomenon known as the Metallic Blimp, from 2019

VIDEOS IN THE SKY

"I can confirm that the referenced photos and videos were taken by Navy personnel. The UAPTF [Unidentified Aerial Phenomena Task Force] has included these incidents in their ongoing examinations," Susan Gough, a Pentagon spokesperson, told several online UFO investigation outlets last week.

"As we have said before, to maintain operations security and to avoid disclosing information that may be useful to potential adversaries, DoD does not discuss publicly the details of either the observations or the examinations of reported incursions into our training ranges or designated airspace, including those incursions initially designated as UAP."

Her statement was a reference to photos and videos taken on three separate occasions, which were sent to the new Pentagon task force designated to investigate such sightings.



In one encounter, on March 4, 2019, a Navy aviator used his cellphone to take photos of three separate UAPs. One was dubbed "the Sphere," one "the Acorn," and a third "the Metallic Blimp," based on their shapes and appearances. None moved in surprising ways. This took place off the East Coast, near Naval Air Station Oceana in Virginia, in a region where other reported sightings had taken place.

In July of 2019, off the coast near San Diego, the USS *Russell*, a Navy destroyer, recorded a video of pyramid-shaped objects flying overhead.

Also off the West Coast, the USS *Omaha* recorded a large spherical object that dove into the water. A search for the object was unsuccessful.

Those are only the latest videos or images of UAPs that the US military has confirmed as authentic. In April of 2020, the Pentagon officially published three videos of UAPs—known by UFO aficionados as the Tic Tac, Gimbal and Go Fast videos—that apparently showed craft moving or changing course faster than US military planes would be able to. The videos, dating to 2004 and 2015, had previously been released in 2017 by *The New York Times* and a private company. (Some of those pilots told the *Times* that they were ridiculed by other members of their squadron afterward.)

Although the government remains relatively silent about what the videos and pictures it has au-

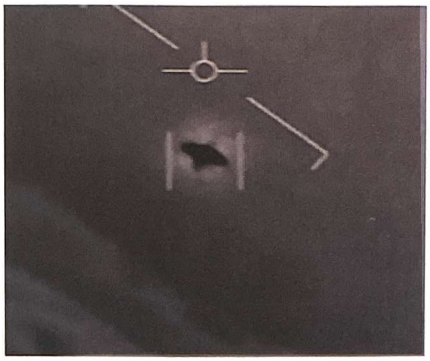
thenticated could depict, it has become less quiet about the fact that it is studying these phenomena. The *Times* reported in 2017 that the Department of Defense had a program operating since 2007 called the Advanced Aerospace Threat Identification Program. Although Pentagon officials later claimed that the program had been disbanded in 2012, the *Times* found that a successor agency, the UAPTF, was mentioned in Senate committee reports in 2020.

Then, in August 2020, the DoD issued a statement saying that Deputy Secretary of Defense David L. Norquist had approved the creation of the UAPTF that month.

Officials then explained that the UAPTF would release some of its findings by at least June 1, 2021.

That deadline is still being anticipated by UFO enthusiasts. In a recent interview with Fox Business, Senator Marco Rubio said that he is "not sure they're gonna come in on time." But it is clear that the government has made some commitment to transparency about these UAP encounters and perhaps others that have not been revealed.

Former government employees who have worked in the formerly secretive agencies looking into these sightings have claimed that the government also has physical materials that they have recovered that are clearly not man-made. Those sorts of claims aren't expected to be discussed in the upcoming release of information. But people who have been fascinated by UFOs for years are excited to finally be getting something, if not everything.

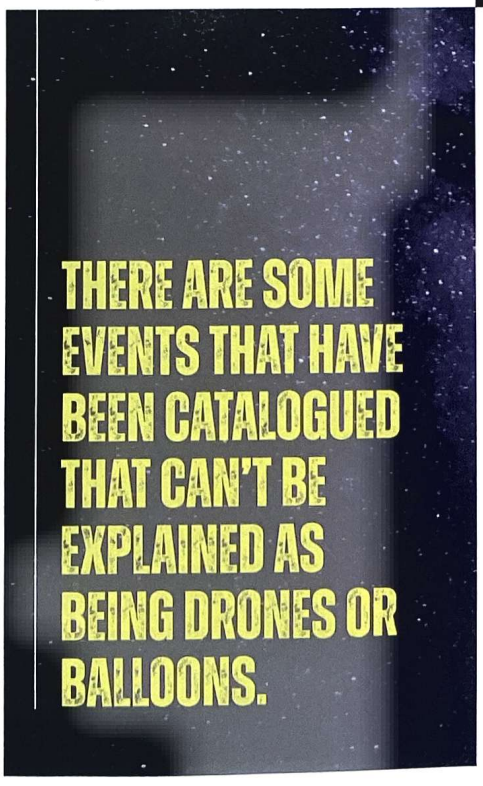


Top: A craft from a 2015 video taken by Navy aviators
Bottom: A craft from a 2019 video by the USS Russell

Professor Avi Loeb

ARE UFOS A GOVERNMENT COVER-UP...OF DRONES?

Not everyone is convinced that the US government is really taking the UAPs as seriously as they should be. In a recent post entitled "Adversary Drones Are Spying On the US and the Pentagon Acts Like They're UFOs," for the technology website the Drive, military aviation writer Tyler Rogoway argues exactly what the title of the piece suggests—that some of the sightings of UAPs are drones used by countries that are hostile to the US, but the military is treating them like aliens from a different planet rather than Russian or Chinese aircraft.



Rogoway does admit that there are some events that have been catalogued that can't be explained as being drones or balloons. The 2004 Tic Tac encounters, for example, appeared to involve craft that could change speed and direction instantaneously, that could "cloak" themselves, and that didn't show up on radar.

But in regard to all of the other reported

events, Rogoway argues that they are entirely consistent with the wide variety of drone shapes and methods of propulsion that they use.

And he argues that drones and balloons could be targeting US fleets off the coasts for a very specific mission: to get the military to use its latest sensing equipment, or ELINT (electronic intelligence), to analyze them. While the new equipment is sending out radio waves of various sorts to try to study the "UFOs," these drone swarms are collecting information about these new systems. They are deliberately drawing attention in order to see how the newest military sensing equipment works—which could give an enemy country an advantage during a fight.

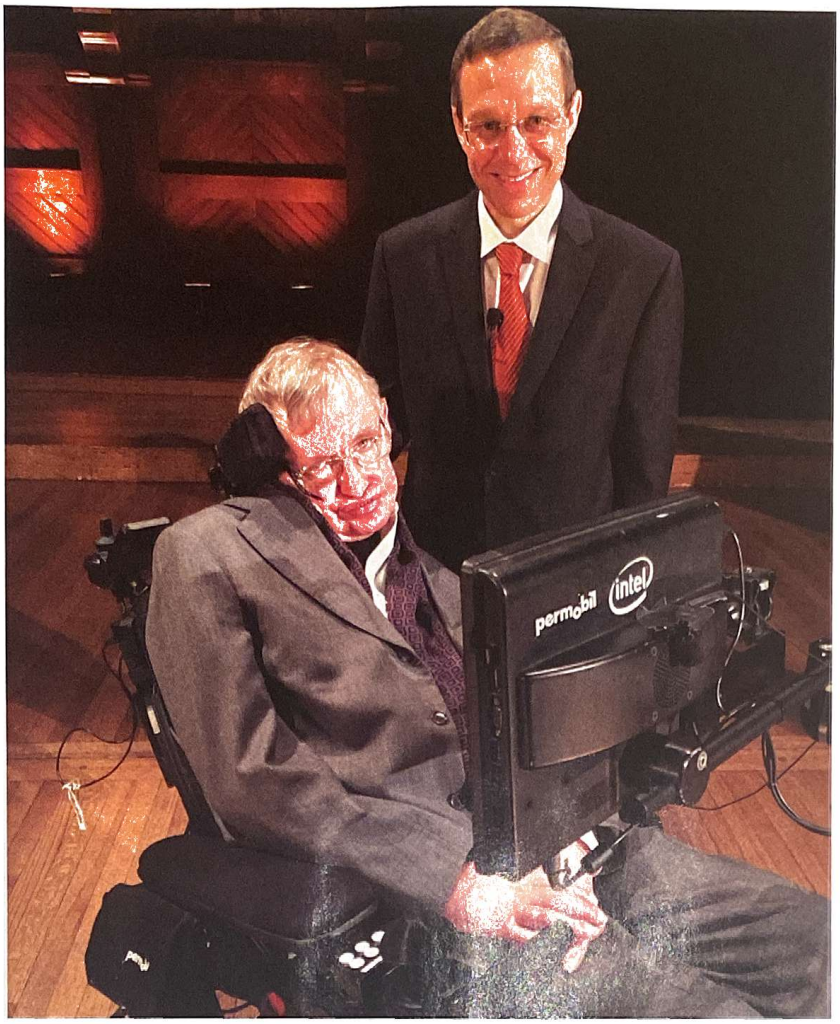
He also argues that this kind of testing of security could be related to drone swarms reportedly sighted near nuclear power plants and near the Theater High Altitude Area Defense anti-ballistic missile battery on Guam.

In his article, Rogoway points out that a drone swarm doesn't require a top-of-the-line drone; instead, you can link plenty of low-level drones and use them together. Furthermore, he notes that the US military has already designed systems to launch drones from submarines. An enemy country could itself be sending up these unmanned craft from submarines or, even simpler, from regular ships that might seem like commercial craft.

Rogoway also argues that the DoD division that was set up to look into these events was treated like a walled-off bunch of UFO kooks rather than a necessary intelligence group looking into the possible activity of a military foe. Because there is a stigma around UFOs, he says, the Pentagon made the division into a small, separate group of analysts—whose expertise he questions—rather than putting the resources that, say, a group of Russian planes flying around off the coast of Virginia and California should demand.

THE SCOUT FROM SPACE

If anyone knows about the stigma surrounding the topic of alien technology, it is Professor Avi (Abraham) Loeb of Harvard University. A prestigious astronomer, he is the director of the university's Institute for Theory and Computation at Harvard; the founding director of Harvard's Black Hole Initiative; and the chair of the Breakthrough Starshot Advisory Committee. He served on the President's Council of Advisors on Science and Technology in the last year of President Trump's



Prof. Loeb with famed astrophysicist Stephen Hawking

administration, and he is a former chair of the National Academy of Sciences' Board on Physics and Astronomy.

He is well-respected enough in the scientific community to have had famed astrophysicist Stephen Hawking over for what was Hawking's first Pesach Seder.

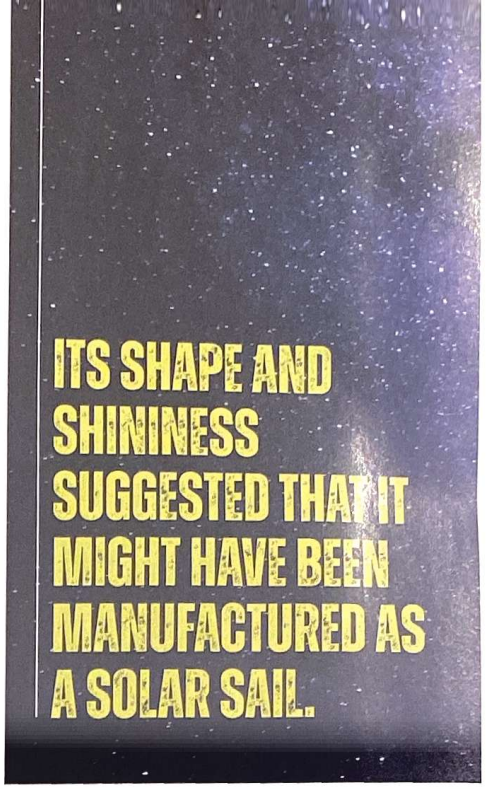
Still, he faced immense backlash after he, along with his post-doctorate student Shmuel Bialy, released a paper about the first object ever seen by astronomers to be passing through our solar system from interstellar space.

Discovered in 2017, the object was smaller than half a mile in length. It wasn't noticed by scientists until it was already past the halfway mark on its route through the Solar System. They named it 'Oumuamua (pronounced oh-MOO-ah-MOO-ah), the Hawaiian word for "scout."

But as they studied the spinning object, researchers noticed something odd about its trip through our region of space: it was accelerating, and that acceleration could not be explained by the forces of gravity exerted on it by the sun and planets. Something was causing 'Oumuamua to speed up.

With a normal comet that might occur because of ice evaporating from its surface due to sunlight, causing it to speed up. But that would cause a tail to form, and observations of 'Oumuamua showed that it didn't seem to have a tail, certainly not of the size necessary for its acceleration.

Although an initial artist's conception, based on early research, showed 'Oumuamua as a cigar-shaped rock, later analysis found that it was more likely a flat, pancake-like object, something almost never found in celestial objects.



In his paper, Prof. Loeb explained the sudden acceleration of 'Oumuamua by pointing to its thin, flattened shape. That shape, he suggested, would allow it to act like a solar sail, using the pressure created by the solar radiation striking it to accelerate. 'Oumuamua was also extremely, unusually shiny; that would also help it act like a solar sail.

In fact, his conception of 'Oumuamua was very close to the kind of solar sail that the Starshot Initiative that he served as chair for was working on. Starshot's solar sail is intended to allow humans to send ships to the distant stars. Prof. Loeb, looking at 'Oumuamua, believed that he was seeing something that an alien intelligence had built on similar principles.

Its shape and shininess and the fact that it had no tail of matter like a comet suggested that it might have been manufactured as a solar sail.

In other words, 'Oumuamua is an alien spacecraft, and its name, meaning "scout," might truly be appropriate.

BACKLASH

Much of the scientific community was not very enthused, however, about the idea that this object was artificial. Several other proposals to explain the acceleration were suggested, and Prof. Loeb's idea was scoffed at.

Some critics pointed to his work on the

Starshot Initiative as a reason he was pushing a lightsail theory. As he puts it in his new book *Extraterrestrial*, "I was accused of seeing lightsails wherever I looked."

But Prof. Loeb believes that he is simply working from the available evidence.

He made that clear when I asked him about the apparent resistance of the majority of the scientific community to the idea of a remnant of an alien civilization zipping through our solar system. After all, hadn't a significant section of the scientific community supported the SETI (search for extraterrestrial intelligence) movement, which started in the 1980s. Well-known scientists like Carl Sagan had been major supporters, and there had been enough funding for SETI projects to train massive radio telescopes on the sky to look for transmissions from other civilizations.

Prof. Loeb suggested that even then, the idea of finding extraterrestrial life had not been mainstream. But he also indicated that he was not a supporter of that kind of search himself.

"What you're describing is very similar to clothing fashion," he said. "It's true that ideas come in and out of fashion, but science should be guided by evidence, and that's the key.

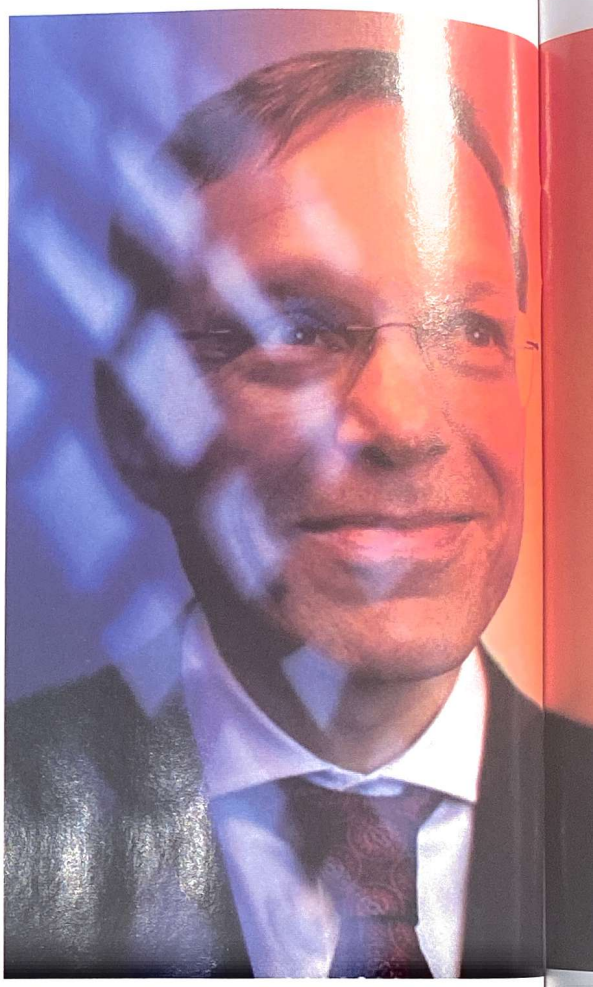
"My interest in this subject was triggered by evidence of six anomalies about 'Oumuamua. I was never into the idea of proposing that we search for such things until we saw this object. As far as I'm concerned I'm just following the scientific process, and I'm coming to it from the exact same point of view as I approach other puzzles that we have throughout the universe.

"For example, we don't know what most of the matter in the universe is, so we label our ignorance and call it dark matter. We call it that because we can't see it—there's no interaction of this matter with light. There were suggestions over the past decades of various particles that might account for the darkness, and hundreds of millions of dollars were invested in that. We haven't found anything yet, but it's part of the scientific process of searching. We're searching in the dark—literally, because the subject is dark matter.

"I regard the search for technological signatures in much the same way. We don't know what they will end up being.

"In the past 70 years we were looking for radio signals, and as you said, there was a time when this was popular. However, we haven't found anything, and frankly I think that is the wrong approach, because it's just like a phone conversation, where you need a counterpart to be alive. If you want to have a phone conversation with

A drawing of 'Oumuamua that Prof. Loeb's daughter made for him



the Mayans, you won't be able to, because the Mayan culture isn't around anymore…

"You can find evidence for the Mayans in archaeological digs and sites from the relics they left behind, and in much the same way, any extra-terrestrial civilization wouldn't be around anymore. Yet we can still find evidence of them if we look for relics.

"To me, the appearance of more and more evidence was simply a wake-up call. This object looked weird, and all of the explanations that people came up for it as a result of resisting my idea contemplated something that we had never seen before.

"For example, one of the suggestions was a hydrogen iceberg, which we've never seen before. In fact, it would have evaporated along the journey, as we showed in a paper.

"There was a suggestion that it was a nitrogen iceberg—something that would chip off the surface of a planet like Pluto around another star. However, again, we showed in a paper that this is not tenable, because it would require a huge amount of mass—more than the mass in stars—in order to account for enough objects made of nitrogen so that we would be able to detect even one of them.

"One suggestion was that it's a cloud of dust particles, which are a hundred times less dense than air. The problem with that is that it wouldn't have the material strength to withstand the heat when it comes close to the sun.

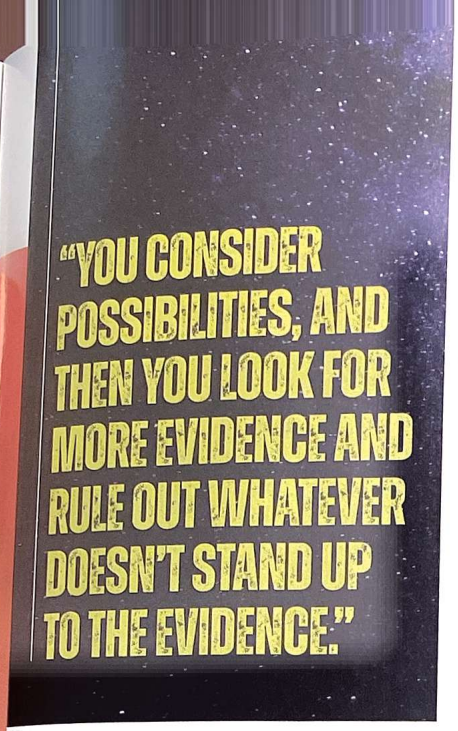
"These are the kinds of ideas that were proposed as alternatives to what I suggested, which is that it's being pushed away from the sun because it's reflecting sunlight. It's a very thin object, sort of like a sail or a surface layer of paper that was torn apart—something that nature doesn't make.

"There was a huge amount of pushback against that, but it wasn't substantial; it was just emotional. That's not the way science is done."

HOW TO DO THE SCIENCE

Prof. Loeb told me that other extreme conjectures in science haven't generated the kind of backlash that he got in regard to the suggestion that 'Oumuamua was manufactured.

"In the context of dark matter, some suggested that it's a particle called an axion—something we have never seen before. There was no emotional pushback against that idea. No one said, 'We should definitely not consider that; that's crazy.'



"No one said that, because that's how science works. You consider possibilities, and then you look for more evidence and rule out whatever doesn't stand up to the evidence.

"In the case of 'Oumuamua we can collect evidence on objects that will look the same that we may find in the future.

"We found this object over a period of three years when we monitored the sky with the Pan-STARRS telescope, and we will find many more over the coming years. There is a new telescope that is much more sensitive than the Pan-STARRS, called the Vera Rubin Observatory, which will be coming online in the next year or two. That could potentially find such objects every month. What I'm saying is let's not assume that we know the answer."

He said that in a sense, we've already found such an object.

"There was another object that was discovered in 2020 and given the name 2020 SO. It was discovered by the same telescope and is pushed away from the sun by reflecting sunlight and doesn't have a cometary tail. It turned out to be a rocket booster from a 1966 lunar lander mission. We know that we produced it and that it had thin walls, and that's why it was pushed by reflecting sunlight. We just don't know who produced 'Oumuamua."

SPACE ARCHAEOLOGY

While SETI research in the past focused on radio waves, Prof. Loeb is proposing something different, something focused on physical remnants, something that he has referred to as astro-archaeology. I asked him why he thought that would bear more fruit than the SETI projects that have gone on until now, which have not had any unambiguous results.

"The reason is simple," he said. "I believe that technological civilizations have a very short window during which they emit radio waves and can be detected and so forth, but at the same time they do send probes into space, just as we did with Voyager 1, Voyager 2 and Horizons. So we can look at the space trash for the things that were left behind, which is not something we have done before."

But, I asked him, light waves radiate outward in all directions. Isn't it harder to find a piece of material floating in space?

"That's only correct if the source of light is steady and continues to emit," he said. "But if the source of light is very short-lived then you only have an opportunity of a very brief moment in time."

How much more technologically advanced do we need to be to carry out "space archaeology"?

"As I said, the Vera Rubin Observatory will soon be coming online, and we estimate that it can find objects like 'Oumuamua once a month. We would then have warnings about a year in advance to intercept the object and photograph it, and if the photograph looks really interesting we can even land on it and take a sample, just as we did with OSIRIS-REx, which was a mission to take a sample from an asteroid called Bennu.

"Objects such as this are too small to detect at great distances; we're talking about an object the size of a football field. The only way to find something that small is when they reflect sunlight upon coming close enough to the sun. That's what Pan-

STARRS and Vera Rubin are looking for. And the objects might be on their way to us when we discover them, which would mean that we wouldn't need rockets to chase them, we would just need rockets to meet them at the right time and place along the trajectory."

WHY THE BACKLASH?

I asked him if he understands where the emotional reaction that his colleagues had to his theory came from.

"There are several aspects to it," he said. "The most fundamental aspect of it is that scientists don't like to be taken out of their comfort zone, so they resist anything new.

"I walked out of a conference room with a colleague of mine after a discussion on 'Oumuamua, and my colleague, who had worked on rocks for a very long time, said, 'This object is so weird that I wish it had never existed.'

"That's an illustration of the weird properties of 'Oumuamua, and the fact that I suggested that it's artificial in origin took a lot of people out of their comfort zones. They don't want to consider something completely different."

Prof. Loeb quotes the famous saying of Rebbe Nachman of Breslov to suggest that scientists need to be less scared: "The whole world is nothing but a very narrow bridge, and the key is not to be fearful at all."

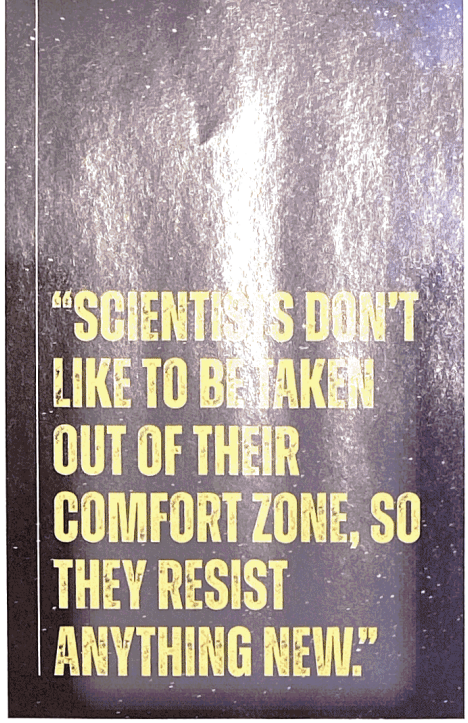
"The second thing," he says, "is that there's huge public interest in this subject, and many people in academia prefer to be on a pedestal, telling the public the answer rather than engaging in a discussion with the public on something that is of great interest to them. There's the literature on unidentified flying objects, aerial phenomena, and there's also a lot of science fiction. Scientists prefer not to be attached to any of this because it doesn't stand up to the level of scientific inquiry.

"But science has to engage with matters of interest to the public if it can clarify them. Regardless of how much nonsense is said about the subject, you can use the scientific method to address it. That's an obligation, especially because the public funds science, so scientists should pay attention to the public's interests.

"The final thing is that there's a lot of media attention on this subject, and many scientists prefer for nothing to go public until we're 100% sure about a given interpretation. The problem with that approach is that you are then giving the illusion to the public that scientists always have the answer, which isn't the case most of the time. Most scientific work is done

with uncertainty, and you have multiple interpretations for evidence. So I'm very much in favor of saying, 'The emperor has no clothes,' and letting the public know about the situation before it's fully clarified.

"Look, for example, at subjects like climate change. If you tell the public what the answer is and then ask them to do something about it, you look like a teacher in a classroom trying to talk down to the students, and the public doesn't like that. It provides the idea that science is the occupation of the elite. I'm very much in favor of being straightforward and transparent about the scientific process. In this case, I don't know for sure that it's artificial, but it's a possibility that we should entertain."



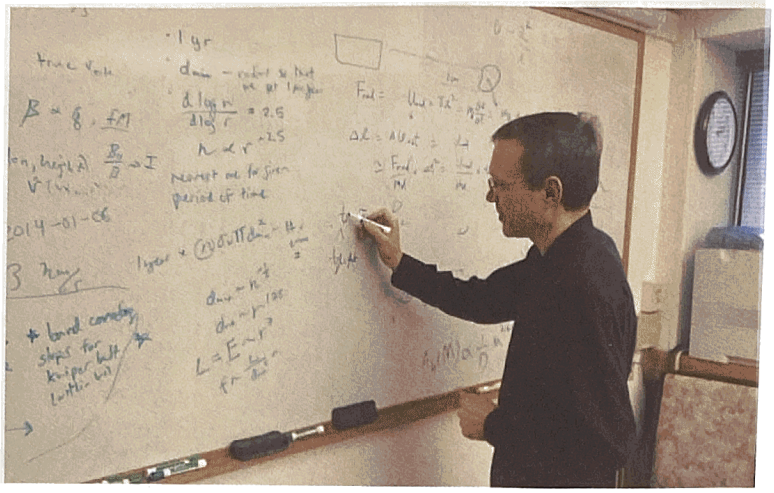
TALKING ABOUT UFOS

I asked him whether the new government transparency about UAPs is something that he sees as helpful to the arguments he's trying to make. He told me that he is sympathetic to people who are interested in these phenomena, with some caveats.

"Science rests on two things," he said. "One of them is evidence rather than opinion.

"For example, there was a discussion about a former Israeli official claiming to have evidence of a galactic federation or something. I found that to be very poor reporting, because you're supposed to ask for the evidence before you report it as credible.

"Evidence is the key; it's not a matter of opinion, and if you don't know for sure then you have to collect more evidence. That's the standard procedure of science, and we should admit that there are uncertainties, and we should consider all possibilities. Otherwise we will never discover



something new.

"If we aren't open to finding wonderful things, we will never discover them, which leads to extraordinary ignorance.

"That was true in the days of Galileo Galilei when the philosophers didn't want to look through his telescope, and it's even truer today when society is so polarized and no one wants to look at the evidence, because they all have their own opinions to start with. That should not be the case in science; science should be based on evidence.

"The second point is reproducibility. You can't just say that you got the results once and that's it; you have to explain how you found this evidence so that other people will be able to reproduce it or find other lines of evidence that support it.

"The problem is that they usually have equipment on aircraft or ships that aren't optimized for finding such things, and the images are very fuzzy. I don't like when the images are fuzzy. I would much rather have the best state-of-the-art instrumentation that's always at the same site so that we can get much better data and reproduce their claims. So let's look to see whether there are any unusual phenomena. By the way, it's also a matter of national security, which is why the government is interested, because there could be another country out there with technology we don't know about.

"To put it simply, rather than obsess over Pentagon reports that will be declassified in June, let's deploy state-of-the-art cameras and audio devices in those locations and see if there's anything unusual. That's the way science is done. Let's just do a scientific experiment. I don't have an opinion or a prejudice one way or the other; I just say that we should collect more data."

It's clear from Prof. Loeb that he's not bothered by the fact that he is being mentioned in the same discussions as those about flying saucers. That doesn't mean, however, that he himself believes that our planet has been visited by aliens.

ALIEN SPACECRAFT AND PUBLIC OPINION

Prof. Loeb said that there is clearly a gap between the way the public feels about his work on 'Oumuamua and how many other scientists have.

"I think the public is very excited about the possibility of finding technological relics, and the success of my book is a testimony to that. It became a *New York Times* bestseller, and it has been published in 27 editions and 24 languages.

"The only problem is that the scientific community is very reluctant to move into new areas. It was the same thing when it came to using gravitational wave atrophies—there was a lot of resistance to that. There was also a lot of resistance [illegible] exoplanets—planets around other star[illegible] people said, 'We don't know if they exist, so there's no point in looking for them.' So it's always like that, but in this case there is [illegible] an emotional component, as we discuss[illegible]

"I try to ignore it, and I also try to focus on the goal rather than the audience, because the evidence is the key, not what people say. Today people can say one thing on Twitter and everyone jumps up and down, and tomorrow, when the evidence will be clear, of course everyone will agree with it. So it's really all about the evidence, and I try to ignore personal attacks and discussions that are unsubstantiated."

Still, he does believe in the value of reaching out to the public. For one thing, astronomy always requires financial investment from the public.

"That's one reason that I believe we need to tend to the public's interest—the public definitely does invest in astronomy.

"But the reason why I was willing to go out on a limb for this subject is that I believe it's the most important question that can shape society in the future if we get a positive answer. We can't ignore the possibility, given the significance to society. It's a huge question that we can't ignore, and we should invest in finding an answer."

His engagement with the public has also had an effect on individuals, something that he clearly finds satisfying.

"I got an email from a woman in Malawi who wrote that the book motivated her to become an astronomer. I invited her to apply to the graduate program at Harvard to pursue astronomy. That was very satisfying to me. And I've been getting many emails from people over the past few months saying that my book changed their lives.

"That means a lot to me, because I wasn't trying to profit from the book, the message was the main thing for me, and there are people who are listening. I'm very gratified by that. I would like if there were more people listening in academia, but the public is definitely listening because they have common sense." ●