

VON BRAUN REVEALED NASA'S PLAN TO WEAPONIZE SPACE

THE HOAX ALIEN INVASION: HOW WERNHER VON BRAUN REVEALED NASA'S PLAN TO WEAPONIZE SPACE

by Robert D Morningstar

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In 2018 and 2019 there was an increase in the reporting of sightings of UFO activity around the world in the media. The report I share in this post had my interests many decades ago. I served three years in West Germany as part of the U.S. Army's "Nuclear" Artillery. The U.S. Army had four battalions of 280mm big guns facing the East German border during the 1950's and early 1960's. 280mm = a projectile of just over 11" in diameter, and weighing 640-lbs. Each battalion had six of these beasts built to fire conventional high-explosive artillery or a nuclear (air burst) W-19 warhead, with a 15-kiloton rating (small in comparison of today's nuclear weapons in the megaton range). The Army produced 80 of these atomic artillery projectiles. We were told in the event of a war breaking out and a Soviet invasion we had a 72-hour life line. Our primary mission was to defend and hold the border between West Germany and East Germany, for 72-hours so that U.S. civilian and military dependents could be evacuated to France and England.

In 1957, we were garrisoned at Des Gouttes Kaserne, in Bad Kreuznach, Germany. With the defeat of Napoleon at Leipzig and Waterloo, the Rheinland-Palatinate, and with it the town of Kreuznach, came under the control of the rising German superstate of Brandenburg-Prussia. With the Treaty of Vienna in 1815, Kreuznach became a part of Prussia.

In 1817, the mineral baths were discovered, and new life was given to the city. The area became a resort for the wealthy of Europe, due to the healing qualities of the natural baths. The name of the city was changed to Bad Kreuznach in order to take advantage of the natural baths in the area. During the nineteenth century, Bad Kreuznach was the playground to the royal families of Europe. Before the outbreak of World War I, a local pharmacist discovered that the briny waters of the springs contained radium. The success of these medical investigations became the foundation of the town's development as a spa and health resort.

Bad Kreuznach was badly damaged by a number of air raids during the last months of World War II. In March 1945, elements of Gen. George Patton's Third Army took Bad Kreuznach. The American units, however, were replaced by French occupation troops in June and July of that year.

Bad Kreuznach is the home of the Schneider Optic Factory, whose cinematographic, photo, and projection lenses are world famous. This factory is over 100 years old, and along with another long-time resident, the Seitz Machine and Filter Works, and the Michelin Tire Factory, forms the backbone of the city's industry. The other major industry of the region is the world renown wine production of Nahe Valley. I bought my first two 35mm cameras at the Army PX, both with Schneider-Kreuznach lenses.

I have an Internet friend who lives in Bad Kreuznach, Germany. We met through an article I had posted on Pre-Tribulation Truth five years ago. In our correspondence, I learned that the U.S. military moved out of Bad Kreuznach as part of a U.S. base-closures program in 2000. The property and facilities were returned to the German government. My German friend told me the town had demolished the former U.S. Army facilities and had undergone a real estate development program and I would not recognize it from the pictures his family has of the city when they were younger.

You are probably wondering what all I have stated has to do with Wernher Von Braun. You have to excuse this old pastor reminiscing from the mid-1950's but there is a point here that connects with the existence of so-called UFO's. It was a hot July night and lights go out at 11 pm in military barracks. My squad room held seven double deck bunks for 14 soldiers. Because of the heat, all the windows were wide open, and none of the troops were asleep. At about 11:10pm those of us whose bunks were closest to the open windows were stunned by what we saw in the night sky.

An object moving at about Mach-4 went across the night sky, and then made a full 90-degree right turn with no evidence of slowing to make a right turn. Eight of my squad saw the same thing, and the local German newspaper confirmed what we had witnessed. Over 280 German

residents saw the very same thing, reporting it the local police. Another two dozen American military personnel saw it as well. Dozens of soldiers at Rose Barracks up the street, headquarters for the U.S. Army's 8th Infantry Division had reported the sighting as well. It had been less than year that I had flown from Fort Dix, NJ (McGuire AFB) on a Douglas DC-6 4-engine propeller troop transport. Seats were configured in a reverse arrangement, opposite of what commercial jet aircraft are. In those days The U.S. MATS (Military Air Transport Service) crisscrossed the Atlantic making two stops in each direction. From New Jersey, we stopped first in Goose Bay, Greenland and Prestwick, Scotland. My return trip was from Frankfurt Rhein-Main stopping first in the Azores Islands, and then in Thule, Greenland before landing at McGuire AFB in New Jersey.

I've never doubted the existence of UFO's since June of 1957. I know what I saw was theoretically impossible and yet hundreds saw the same thing that I observed. I have no explanation but there have been many reports of a secret U.S. space program. Even Katherine Austin Fitts has commented numerous times on the missing \$30-trillion dollars being spent on dark projects of the U.S. space program. Katherine Austin Fitts regularly appear on news program interviews. Ms. Fitts publishes a financial magazine called '*The Solari Report*', and she was former Assistant Secretary of Housing and Urban Development under President Reagan. Ms. Fitts and Professor Mark Skidmore of Michigan State University have been a thorn in the government's back side over the missing \$30-trillion, to such an extent that the Treasury now obfuscates and denies public access to financial records.

I had a hard drive crash four years ago and lost many documents that were extremely important relative to the march to Global Government; and, one of those was an audio message that Carol Rosen delivered on **THE HOAX ALIEN INVASION: HOW WERNHER VON BRAUN REVEALED NASA'S PLAN TO WEAPONIZE SPACE**. **This report has been located and it is important in what government plan to do to bring about world submission to the larger agenda of a Global Government through deceit and trickery.**

By Dr. Carol Rosin
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<Edited by Robert D. Morningstar>

A personal account of How Wernher Von Braun revealed to Dr. Carol Rosin NASA's plan to justify weapons in space based on hoaxing an extraterrestrial threat

Dr. Carol Rosin was the first woman corporate manager of **Fairchild Industries** and was spokesperson for **Wernher Von Braun** in the last years of his life. She founded the **Institute for Security and Cooperation in Outer Space** in **Washington DC** and has testified before Congress on many occasions about space based weapons. Von Braun revealed to Dr. Rosin a plan to justify weapons in spaced based on hoaxing an extraterrestrial threat. She was also present at meetings in the '70s when the scenario for the Gulf War of the '90s was planned.

Editor's note: -> In the transcript of their interview cited below, **CR** represents commentary by **Dr. Carol Rosin** and **SG** designates questions from **Dr. Steven Greer**



Click the link below to hear Dr. Carol Rosin and Dr. Steven Greer discuss the false threat posed by

THE HOAX ALIEN INVASION

<https://www.youtube.com/watch?v=hG8ML2Y6Q6s>

CR: My name is Carol Rosin. I am an educator who became the first woman corporate manager of an Aerospace Company, Fairchild Industries. I am a Space and Missile Defense Consultant and have consulted to a number of companies, organizations, and government departments, even the intelligence community. I was a consultant to TRW working on the MX missile, so I was part of that strategy, which turned out to be a role model for how to sell space-based weapons to the public. The MX missile is yet another weapon system that we didn't need.

I founded the Institute for Security and Cooperation in Outer Space, a Washington DC based think tank. I am an author and have testified before Congress and the President's Commission on Space.

When I was a Corporate Manager of Fairchild Industries from 1974 through 1977, I met the late Dr. Wernher Von Braun. We first met in early 1974. At that time, Von Braun was dying of cancer but he assured me that he would live a few more years to tell me about the game that was being played- that game being the effort to weaponize space, to control the Earth from space and space itself. Von Braun had a history of working with weapons systems. He had escaped from Germany to come to this country and had become a Vice President of Fairchild

Industries when I met him. Von Braun's purpose during the last years of his life, his dying years, was to educate the public and decision-makers about why space-based weapons are *dumb, dangerous, destabilizing, too costly, unnecessary, unworkable, and an undesirable idea*, and about the alternatives that are available.



As practically a deathbed speech, he educated me about those concepts and who the players were in this game. He gave me the responsibility, since he was dying, of continuing this effort to prevent the weaponization of outer space. When Wernher Von Braun was dying of cancer, he asked me to be his spokesperson, to appear on occasions when he was too ill to speak. And so, I did this.

What was most interesting to me was a repetitive sentence that he said to me over and over again during the approximately four years that I had the opportunity to work with him. He said the strategy that was being used to educate the public and decision makers was to use *scare tactics* ... That was how we identify an *enemy*.

The strategy that Wernher Von Braun taught me was that first the Russians are going to be considered to be the enemy. In fact, in 1974, they *were* the enemy, the identified enemy. We were told that they Russians had "killer satellites." We were told that they were "coming to get us" and control us – that they were "Commies."

Then, after the Russian threat passed (with the "fall of Communism"), *terrorists* would be identified as the next threat, and that was soon to follow. Throughout the media for the next decade, we heard a lot about *terrorism*. Then we were going to identify third-world country "crazies." We now call them Nations of Concern. But he said that would be the third enemy against whom we would build space-based weapons.

The next enemy was asteroids. Now, at this point he kind of chuckled the first time he said it. Asteroids- against asteroids we are going to build space-based weapons. And the funniest one of all was what he called aliens, extraterrestrials. That would be the final scare. And over and over and over during the four years that I knew him and was giving speeches for him, he would

bring up that last card. “And remember Carol, the last card is the alien card. We are going to have to build space-based weapons against aliens and all of it is a lie.”

I think I was too naïve at that time to know the seriousness of the nature of the spin that was being put on the system. And now, the pieces are starting to fall into place. We are building a space-based weapons system on a premise that is a lie, a spin. Wernher Von Braun was trying to hint that to me back in the early 70's and right up until the moment when he died in 1977.

What he told me was that there is an accelerated effort in place. He didn't mention a timeline but he said that it was going to be speeding up faster than anybody could possibly imagine. That the effort to put weapons into space was not only based on a lie but would accelerate past the point of people even understanding it until it was already up there and too late.

When Von Braun was dying in front of me, the very first day that I met him, he had tubes draining out of his side. He was tapping on the desk telling me, “You will come to Fairchild.” I was a schoolteacher. He said, “You will come to Fairchild and you will be responsible for keeping weapons out of space.” The way he said it with this intensity in his eyes, and added that very first day, the first time I met him, that space-based weapons were a dangerous, destabilizing, too costly, unnecessary, untestable, unworkable idea.

The last card that was being held was the extraterrestrial enemy card. The intensity with which he said that, made me realize that he knew something that he was too afraid to mention. He was too afraid to talk about it. He would not tell me the details. I am not sure that I would have absorbed them if he had told me the details or even believed him in 1974. But there was no question that this man knew and had a need to know, I found out later.

There is no doubt in my mind that Wernher Von Braun knew about the *extraterrestrial issue*. He explained to me the reasons why weapons were going to be put into space, the enemies against whom we were going to build these weapons, and that all of that was a lie. He mentioned that extraterrestrials were going to be identified as the final enemy against whom we were going to build space-based weapon systems back in 1974. The way he said it to me, there was no doubt in my mind that he knew something that he was too afraid to talk about.

Wernher Von Braun never spoke to me about any of the details that he knew related to extraterrestrials except that one day extraterrestrials were going to be identified as an enemy against whom we are going to build an enormous space-based weapons system. Wernher Von Braun actually told me that the spin was a lie – that the premise for space-based weaponry, the reasons that were going to be given, the enemies that we were going to identify – were all based on a lie.



I have been tracking the space-based weapons issue for about 26 years. I have debated Generals and Congressional Representatives. I have testified before the Congress and the Senate. I have met with people in over 100 countries. But I have *not been able to identify who the people are who are who are* making this space-based weapons system happen. I see the news. I see the administrative decisions being made, (regardless of who is President, or what party controls the Congress) and I know that they are all based on lies and greed. But I have yet to be able to identify who the people are behind the plan to weaponize outer space. And that is after tracking this issue for 26 years.

I know that there are big secrets being kept and I know that it is time the public and decision-makers pay attention to the people who are now going to be disclosing the truth. Instead of weaponizing outer space, we need to make some definite changes and build a system in space that will benefit every single person, and all of the animals, and the environment of this planet. The technology is there. The solutions to Earth's urgent and long-term potential problems are there. I have a feeling that once we start studying this extraterrestrial issue, all of the questions that I have had for 26 years are going to be answered.

However, I have concluded that the plan to weaponize outer space is based on a few people, who are intent making a lot of money and gaining global power. In large part, it is also about *ego*.

It is not about our essence and who we really are on this planet and loving each other and being at peace and cooperating. The plan isn't about using technology to solve problems and heal people on this planet. It isn't about that at all. It is about a few people who really are playing an old, dangerous, costly game to pad their own pocketbooks and engaged in a global power struggle. That is all it is.

I believe that this entire space-based weapons game is initiated right here in the United States of America. What I hope for is that with this information that is being disclosed, the new

administration will to do what is right. That is to transform the war game into a space game so that we use the technologies that are available not just as spin-offs of war technology, but as direct technological applications to build a cooperative space system that will benefit the entire world and that will allow us to communicate with the extraterrestrial cultures that are obviously “out there.”

Who would benefit from these space-based weapons?

They are the people who work in that arena, people in the military, in industries, in universities and labs, in the intelligence community. This is not just in the United States, but it is worldwide. This is a worldwide cooperative system. *Wars are cooperative.*

Just as peace will be when it breaks out. But right now there are a lot of people benefiting from destruction. This is what our economy has been based on in this country for decades and it is now spreading around the world. Wars are being conducted for profit not only political policies. Untold millions of people are suffering as a result.

It is not fair. It never has been. Prophets have foretold and people have screamed: “*out of swords let us build plow shares, let’s have peace and hold hands around the world,*” but it hasn’t worked because too many people are benefiting from the mass destruction, which every war brings. Not only are they benefiting financially, but from what my experience is, there are people who actually believe that Armageddon *should happen precisely* so that we have to have these wars.

So, the propaganda for the weaponization of space is going from the plans and pocketbook of a military-industrial complex, to the religious right: *some people actually believe that we have to have wars for these religious reasons (claiming that “It’s in the Bible”).*

There are people who just love war.

I have met warriors who just love to go to war. Then there are the good people, the soldiers, who just take orders. They have to feed their children and send them to college so they want to keep their jobs. People in laboratories have told me that they don’t want to work on these technologies for war, but if they don’t they won’t get a paycheck. Who is going to pay them? But what I see is that there are not only dual uses for these technologies but there are many uses for the same technologies.

We can build space hospitals, schools, hotels, laboratories, farms, industries. It may sound *far-out* but if we don’t do that, we are going to build battle stations and weapons pointed down on all of our heads and back out into space. Apparently we have been doing some of that already.

We have a choice now that can be made. We can all benefit – all of the people in the military industrial complex, in the intelligence community, in universities and labs, in the United States and all over the world – we can all benefit. We can just transform that industry so easily with a change of course, a change of attitude, a decision based on our highest consciousness, our

spirituality, and on the fact that we have no choice unless we all want to die. And clearly, we don't. So we can all benefit financially, spiritually, socially, psychologically by de-weaponizing outer space. This is technologically and politically feasible. It is possible to transform this game now and everyone on Earth will benefit.

In 1977 I was at a meeting in Fairchild Industries in a conference room called "The War Room." In that room were a lot of charts on the walls with enemies, identified enemies. There were other more obscure names, names like *Saddam Hussein and Khadafi*. But we were talking then about terrorists, the potential terrorists. No one had ever talked about this before, but this was the next stage after the Russians against whom we were going to build these space-based weapons. I stood up in this meeting and I said:

"Excuse me, why are we talking about these potential enemies against whom we are going to build space-based weapons ... if, in fact, we know that they are not the enemy at this time?"

Well, they continued the conversation about how they were going to antagonize these enemies and that at some point, there was going to be a war in the Gulf, a Gulf War! Now this was in 1977, 1977!

And even then, they were talking about creating a war in the Gulf Region when there was still 25 billion dollars in the space-based weapons program *that had yet to be identified*. At least it wasn't called the Strategic Defense Initiative,. That was not until 1983.

This weapons system, then, had obviously been going on for some time and I didn't know anything about it. So I stood up in this meeting in 1977 and said:

"I would like to know why we are talking about space-based weapons against these enemies. I would like to know more about this. Would someone please tell me what this is about?"

Nobody answered. They just went on with this meeting as though I hadn't said anything. Suddenly I stood up in the room and said,:

"If nobody can tell me why you are planning a war in the Gulf when there is a certain amount of money in a budget so that you can create the next set of weapons systems that will be the beginning of the sell to the public about why we need space-based weapons, then consider this: my resignation. And you will not hear from me again!"

And nobody said a word, because they were planning a war in the Gulf and it happened exactly as they planned it, and on schedule!

SG: Who was at this meeting?

CR: The room was filled with people in the revolving door game. There were people that I had seen once in a military uniform and other times in a gray suit and an industry outfit. These people play a revolving door game. They work as consultants, industry people, and/or military and intelligence people. They work in the industries and they revolve themselves through these doors and right into government positions.

I stood up in this meeting and asked if I was hearing correctly, namely, that when there was *25 billion dollars* already expended in the space-based weapons budget, that there was going to be a war in the Gulf, stimulated, created, so that *they could then sell the next phase of weapons to the public and the decision-makers?*

This war was going to be created so that they could dump the old weapons and create a whole new set of weapons. So I had to resign from that position. I could no longer work in that industry.

One day in 1990, I was sitting in my living room looking at the money that had been spent on space-based weapons research and development programs and I realized that it had come to that number, *about 25 billion dollars*, and I said to my husband::

“I am now going to stop everything. I am now going to stop and sit and watch CNN television and I am going to wait for the war to happen.”

My husband said, *“Well, you have finally gone over the edge. You have flipped out.”* Friends said, *“You have really gone too far this time. There is not going to be a war in the Gulf, nobody is talking about a war in the Gulf.”*

I replied: “There is going to be a war in the Gulf. I am going to sit here and wait for the war in the Gulf.”

And it happened right on schedule.

As part of the “war game” in the Gulf, we in the public were told that the United States was successful in shooting down Russian Scud Missiles. We were rationalizing new budgets based on that success. In fact, we found out later, after the budgets were approved for the next phase of weapons, that it was a lie.

We did not have successful shoot-downs the way we were told. It was all a lie, just to get more money put in the budget to make more weapons. I was one of the first people to go independently to Russia when I heard that they had “killer satellites.”

[See the testimony of Dr. Paul Czysz. SG]



When I went to Russia in the early 70's, *I found out that they didn't have killer satellites*, that it was all a lie. In fact, the Russian leaders and people wanted peace. They wanted to cooperate with the United States and with the people of the world.

Another time, I called Saddam Hussein when he was lighting his oil fields on fire. My husband was in the kitchen while I was making this phone call. *I got a call back from his First Attaché with Saddam Hussein nearby and he asked:*

"Are you a reporter? Are you an agent? Why do you want to know?"

I said, "No. I am just a citizen who helped to start the movement to prevent the weaponization of outer space and I have found that a lot of stories that I have been told about weapons systems and the enemies are not true. I wanted to find out what would satisfy Saddam Hussein so he would stop making these oil fields catch fire and stop antagonizing people."

The First Attaché to Saddam Hussein replied:

"Well, nobody has ever asked him that question, what he wants." ...

So when I hear that there is a possible "threat of extraterrestrials" – and I look at the history of thousands of years of possible ET visitations, and hear the disclosures of honest military-intelligence-industry people who have had experiences with UFO's, with crashes and landings, with live and dead bodies of extraterrestrial beings – I know it is a lie.

And if I am ever told that these are enemies against whom we have to build space-based weapons systems, based on my own personal experience of having worked in the military

industrial complex on weapons systems and military strategy, I am going to know it is a lie. It is a lie.

Not only will I not believe it, but I am going to go out as loudly as I can and tell everyone to take a look. They [the ET's] have not taken us away yet. We are still here after thousands of years of visits from "Them.." If in fact they are still visiting us now, and we have not been harmed by hem, then we have to look at these visits as something that is not a hostile occurrence.

It would be my hope and my intention to do everything I could to work with people who are working to communicate with and cooperate with these extraterrestrial beings. They are clearly not hostile. *We are here*. That is enough proof for me.

There is no limit to how people can choose to live on this planet. We have a chance to do that and I think that the window is closing rapidly. I don't think that we have much time in which to make and implement that decision. We are too close in too many ways to having some horrible disaster happen, or having some sort of "worst war" take place, whether it is from high technology or an exotic weapons system.

We need leadership, and it has to start with the United States President and that is who we all have to reach. If you are international, if you are around the world, if you are in the United States of America, whether you are from any party, any belief system or religion – the United States Commander in Chief, the President of the United States is the person that needs to be reached. We need to say that we want an ultimate, comprehensive, verifiable ban on all space-based weapons.



Dr. Carol Rosin

The Disclosure Project

July 7th, 2016

[http://ufology.wikia.com/wiki/Disclosure Project](http://ufology.wikia.com/wiki/Disclosure_Project)

[http://ufology.wikia.com/wiki/Carol Rosin](http://ufology.wikia.com/wiki/Carol_Rosin)

I would suggest to you that all of the hype of UFO's in the past two or three decades are in fact a ruse to further enslave humanity under the guise of "Peace and Security" Steven Greer has a new movie out Dr Steven Greer's newest film, '*Close Encounters of the Fifth Kind: Contact Has Begun*' premieres on April 6th in Los Angeles.

In this film, Dr. Greer presents the most dangerous information that the architects of secrecy don't want you to know: how forgotten spiritual knowledge holds the key to humans initiating contact with advanced ET civilizations.

The film features groundbreaking video and photographic evidence and supporting interviews from prominent figures such as Adam Curry of Princeton's PEAR Lab; legendary civil rights attorney Daniel Sheehan, and Dr. Russell Targ, who headed the CIA's top-secret remote viewing program. Their message: For thousands of people, contact has begun. This is their story.

I have not seen the new movie yet; however, the reader needs to be aware of the evidence revealed in early December of 2019 in the journal of 'Natural Astronomy' that the two Voyager space probes launched in 1977, have yielded evidence to the fact that we live in a closed universe. There is a space Plasma "Fire Wall" which produces heat in the range of 89,000-degrees Fahrenheit .

NASA's New Horizons spacecraft has helped scientists study a mysterious phenomenon at the edge of the Solar System, where particles from the Sun and interstellar space interact.

This region, about 100 times further from the Sun than Earth, is where uncharged hydrogen atoms from interstellar space meet charged particles from our Sun. The latter extend out from our Sun in a bubble called the heliosphere.

At the point where the two interact, known as the heliopause, it's thought there is a build-up of hydrogen from interstellar space. This creates a sort of "wall", which scatters incoming ultraviolet light.

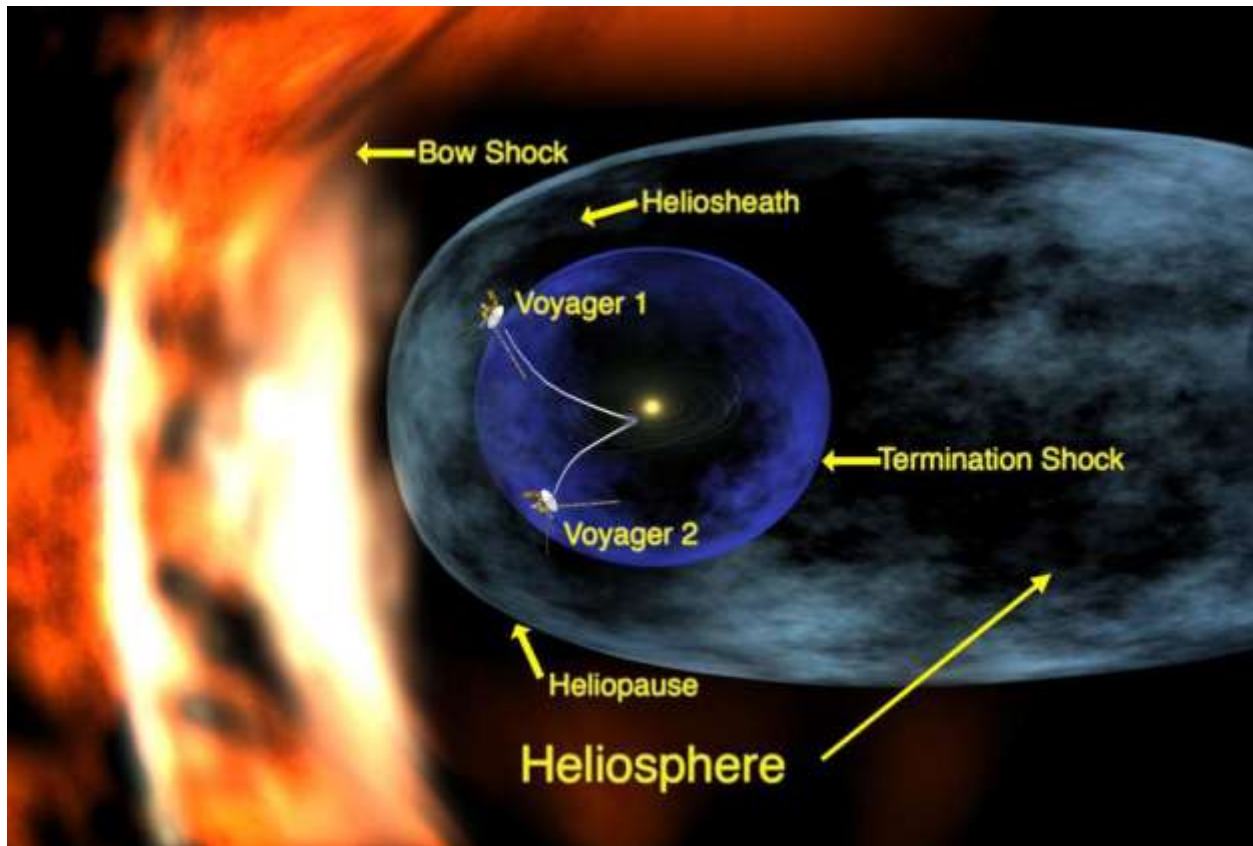
About 30 years ago NASA's Voyager 1 and 2 spacecraft first detected this wall, and now New Horizons has found new evidence for it. A paper describing its findings will be published in Geophysical Research Letters.

"We're seeing the threshold between being in the solar neighborhood and being in the galaxy," Dr Leslie Young from the Southwest Research Institute in Colorado, one of the co-authors on the paper, told Science News.

New Horizons made the detection using its Alice UV spectrometer, taking measurements from 2007 to 2017. It found an ultraviolet glow known as a Lyman-alpha line, which is made when solar particles hit hydrogen atoms.

We see this ultraviolet glow all over the Solar System. But at the heliopause, there appears to be an additional source caused by the wall of hydrogen, creating a larger glow. Beyond the wall there's more ultraviolet light compared to in front of it, suggesting it's being scattered by the wall.

"This distant source could be the signature of a wall of hydrogen, formed near where the interstellar wind encounters the solar wind," the researchers wrote in their paper.



The wall is thought to be at the location of the heliopause. NASA

The theory is not definitive yet. It's possible that another source of ultraviolet light in our galaxy could be causing this background glow. To find out for sure, New Horizons will continue looking for the wall about twice a year.

At some point, New Horizons will cross the wall, if it exists, so the amount of ultraviolet light it detects will decrease. That would provide some additional evidence that the wall is really there.

Voyager 1 and 2 are both past the wall now, so they're unable to make any further detections. But New Horizons is only 42 times further from the Sun than Earth, a distance it has taken about 12 years to achieve, and is currently on its way to explore a new target called Ultima Thule having flown past Pluto in 2015.

If our estimates are correct, then by the time the mission ends in about 10 to 15 years, it should hopefully have just about made it to the wall. At that point, we might really know for sure if it's there or not.

on Nov. 5, 2018, NASA's Voyager 2 became only the second spacecraft in history to leave the heliosphere - the protective bubble of particles and magnetic fields created by our Sun. At a distance of about 11 billion miles (18 billion kilometers) from Earth - well beyond the orbit of Pluto - Voyager 2 had entered interstellar space, or the region between stars. Today, five new research papers in the journal *Nature Astronomy* describe what scientists observed during and since Voyager 2's historic crossing.

Each paper details the findings from one of Voyager 2's five operating science instruments: a magnetic field sensor, two instruments to detect energetic particles in different energy ranges and two instruments for studying plasma (a gas composed of charged particles). Taken together, the findings help paint a picture of this cosmic shoreline, where the environment created by our Sun ends and the vast ocean of interstellar space begins.

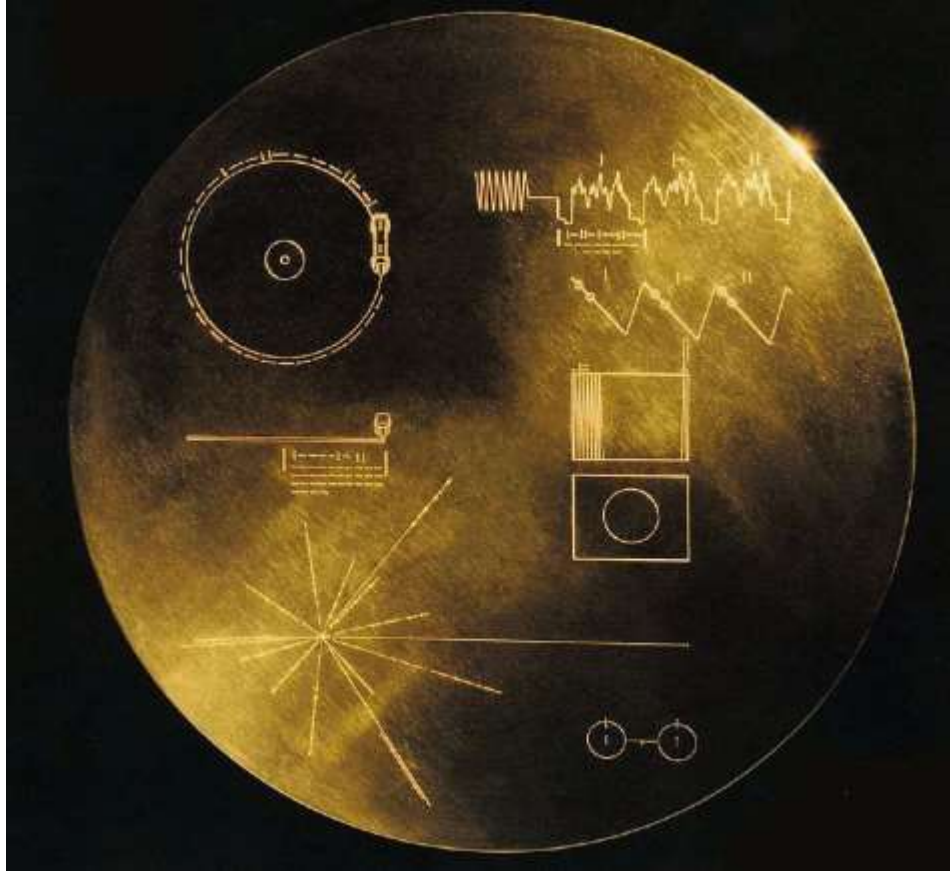
The Sun's heliosphere is like a ship sailing through interstellar space. Both the heliosphere and interstellar space are filled with plasma, a gas that has had some of its atoms stripped of their electrons. The plasma inside the heliosphere is hot and sparse, while the plasma in interstellar space is colder and denser. The space between stars also contains cosmic rays, or particles accelerated by exploding stars. Voyager 1 discovered that the heliosphere protects Earth and the other planets from more than 70% of that radiation.

When Voyager 2 exited the heliosphere last year, scientists announced that its two energetic particle detectors noticed dramatic changes: The rate of heliospheric particles detected by the instruments plummeted, while the rate of cosmic rays (which typically have higher energies than the heliospheric particles) increased dramatically and remained high. The changes confirmed that the probe had entered a new region of space.

Before Voyager 1 reached the edge of the heliosphere in 2012, scientists didn't know exactly how far this boundary was from the Sun. The two probes exited the heliosphere at different locations and also at different times in the constantly repeating, approximately 11-year solar cycle, over the course of which the Sun goes through a period of high and low activity. Scientists expected that the edge of the heliosphere, called the heliopause, can move as the Sun's activity changes, sort of like a lung expanding and contracting with breath. This was consistent with the fact that the two probes encountered the heliopause at different distances from the Sun.

The new papers now confirm that Voyager 2 is not yet in undisturbed interstellar space: Like its twin, Voyager 1, Voyager 2 appears to be in a perturbed transitional region just beyond the heliosphere.

"The Voyager probes are showing us how our Sun interacts with the stuff that fills most of the space between stars in the Milky Way galaxy," said Ed Stone, project scientist for Voyager and a professor of physics at Caltech. "Without this new data from Voyager 2, we wouldn't know if what we were seeing with Voyager 1 was characteristic of the entire heliosphere or specific just to the location and time when it crossed."



Above – NASA's twin Voyager spacecraft launched in August and September 1977. Aboard each spacecraft is a golden record, a collection of sights, sounds and greetings from Earth. There are 117 images and greetings in 54 languages, with a variety of natural and human-made sounds like storms, volcanoes, rocket launches, airplanes and animals. (Image: © NASA)

Pushing Through Plasma

The two Voyager spacecraft have now confirmed that the plasma in local interstellar space is significantly denser than the plasma inside the heliosphere, as scientists expected. Voyager 2 has now also measured the temperature of the plasma in nearby interstellar space and confirmed it is colder than the plasma inside the heliosphere.

In 2012, Voyager 1 observed a slightly higher-than-expected plasma density just outside the heliosphere, indicating that the plasma is being somewhat compressed. Voyager 2 observed that the plasma outside the heliosphere is slightly warmer than expected, which could also indicate it is being compressed. (The plasma outside is still colder than the plasma inside.) Voyager 2 also observed a slight increase in plasma density just before it exited the heliosphere, indicating that the plasma is compressed around the inside edge of the bubble. But scientists don't yet fully understand what is causing the compression on either side.

Leaking Particles

If the heliosphere is like a ship sailing through interstellar space, it appears the hull is somewhat leaky. One of Voyager's particle instruments showed that a trickle of particles from inside the heliosphere is slipping through the boundary and into interstellar space. Voyager 1 exited close to the very "front" of the heliosphere, relative to the bubble's movement through space. Voyager 2, on the other hand, is located closer to the flank, and this region appears to be more porous than the region where Voyager 1 is located.

Magnetic Field Mystery

An observation by Voyager 2's magnetic field instrument confirms a surprising result from Voyager 1: The magnetic field in the region just beyond the heliopause is parallel to the magnetic field inside the heliosphere. With Voyager 1, scientists had only one sample of these magnetic fields and couldn't say for sure whether the apparent alignment was characteristic of the entire exterior region or just a coincidence. Voyager 2's magnetometer observations confirm the Voyager 1 finding and indicate that the two fields align, according to Stone.

The Voyager probes launched in 1977, and both flew by Jupiter and Saturn. Voyager 2 changed course at Saturn in order to fly by Uranus and Neptune, performing the only close flybys of those planets in history. The Voyager probes completed their Grand Tour of the planets and began their Interstellar Mission to reach the heliopause in 1989. Voyager 1, the faster of the two probes, is currently over 13.6 billion miles (22 billion kilometers) from the Sun, while Voyager 2 is 11.3 billion miles (18.2 billion kilometers) from the Sun. It takes light about 16.5 hours to travel from Voyager 2 to Earth. By comparison, light traveling from the Sun takes about eight minutes to reach Earth.

More information about Voyager is available at the following site:

<https://voyager.jpl.nasa.gov/>

Imagine you're running the faucet above a sink, and picture specifically the way the falling water from the faucet continuously splashes outward against the bowl, creating a little area where the standing water in the bowl can't invade. It turns out [the Sun](#) does kind of the same thing as the water falling from the faucet, only instead of flinging water outward, it flings solar wind in every direction, and instead of standing water around it, there's a particle soup made up of interstellar plasma. And while scientists have known about this dynamic for years, they've now discovered, thanks to the [Voyager 2](#) space probe, that the region around the outer edge of our "shield" made up of solar wind, which clashes with the interstellar plasma soup, consists of an 89,000 degree Fahrenheit wall of (low density) plasma.

The sphere of piping hot plasma—which, again, is low density, meaning Voyager 2 can pass right through it without a problem—is discussed in the video above from YouTuber and high school science, math, and computer science teacher, [Anton Petrov](#). In the video, which comes

via [Digital Journal](#), Petrov discusses one of NASA's latest discoveries, made when its Voyager 2 space probe (launched in '77) began passing through a region surrounding our solar system known as the heliopause. In this region, Voyager 2 discovered the spherical wall of interstellar plasma, which Petrov calls a "wall of fire."

That "wall of fire," Petrov notes, can be thought of as "an actual physical physical barrier," and is "almost like a wall of hot plasma and... cosmic radiation that suddenly jumps up as soon as we cross into the so-called interstellar space." That wall of hot plasma ranges in temperature from 30,000 to 50,000 kelvin (roughly 53,000 to 89,000 degrees Fahrenheit), according to a paper published earlier this month in [the journal Nature Astronomy](#). In the abstract for that paper, the authors say that "The [very local interstellar medium, a.k.a. the wall of hot plasma] is variable near the [heliopause] and hotter than expected. The abstract also notes that "Voyager 2 observations show that the temperature [in that region] is 30,000–50,000 K, whereas [models](#) and observations predicted a [very local interstellar medium] temperature of 15,000–30,000 K."

Needless to say, we earthlings are ridiculously lucky to have that solar-wind shield. The heliosphere, which the Sun provides, blocks out 70% of the interstellar cosmic rays. If we didn't have the heliosphere, those cosmic rays would otherwise charge in and interact with us here on Earth, causing a serious uptick in [the amount of radiation](#) we'd absorb.

It's unclear how difficult this wall of hot plasma will make interstellar travel, once we decide to go beyond Mars and eventually leave our solar system, but considering both Voyager 2, and even Voyager 1 (also launched in '77) made it through OK, it seems like at least our interstellar ships wouldn't be too negatively affected. Although it's unclear how the [plasma](#) wall will affect we biological beings. Regardless, the discovery is exciting because, [as JPL notes](#), this is the "cosmic shoreline... where the environment created by our Sun ends and the vast ocean of interstellar space begins."

What do you think of this temperature check on the massive plasma wall around our solar system? Scientists have stated that the Plasma Fire Wall prevents leaving our universe or any things else from entering our universe, i.e. UFO's, or ET's.

Blessings,

Pastor Bob, EvanTeachr@aol.com