

What's and Why's of UFOs Today

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By Robert J. Kniskern

Thanks to the committee for assigning me this topic, I hope to share with you some of the interesting things I have learned about UFOs.

The title of this paper is the “Whats and Whys of UFOs Today”.

The Encyclopaedia Britannica definition of UFOs

- **Unidentified flying objects (UFOs) are airborne objects—or optical phenomena that seem like airborne objects—that an onlooker is unable to identify.**

In this paper I will first describe some of the older and more historical sightings and observations of UFOs, and then look at incidents involving UFOs over the last 10 years with a focus on some of the more recent UFO sightings involving military pilots. I will also try to describe some of the more common theories and explanations brought forward to explain the nature of UFOs.

I hope to leave you with interesting information about UFOs and the efforts underway to understand their origin, and to also provide you with a useful bit of perspective that you can use to help understand and evaluate reports of UFO.

During my research I have tried to separate the discussion of the existence and possible origins of UFOs from the default assumption that Aliens from other worlds are involved. I accept that speculation about the existence of aliens as an

exciting pursuit has existed for many years and there are a number of conspiracy theories and confusing explanations attempting to promote the theory that we've perhaps been visited by astronauts from other worlds in the past and they may be here now as well. These speculations generally also propose the assumption that the existence of Aliens are known for sure by some powerful people, or the government, and the general public has been kept in the dark regarding the truth of their existence and purpose in coming to the earth. While it is possible that this is actually true, I would prefer to have supporting evidence of such a fact, rather than it being used to try to explain our lack of knowledge about a mystery.

Keep in mind the simple fact that in spite of all the hype you may have heard, we still do not have any clear physical evidence that can be peer-reviewed by researchers and subjected to the normal minimum diligence you would expect from such a profound discovery. As Carl Sagan once stated, "extraordinary claims require extraordinary evidence". What we do have are significant numbers of first hand reports of strange sightings by observers, sometimes with accompanying photographs or video footage.

To assume first that aliens exist and then look for various clues that seem to support that theory appears to be a full-time occupation of many people on the Internet and I chose not to spend much time with the speculative theories attempting to be fitted to unexplained sightings. It seems that humans are very quick to look for explanations from other worlds to explain mysteries on our planet. For example, you are probably acquainted with some of the theories that postulate extraterrestrial involvement in the construction of ancient pyramids or

the existence of ancient structures that seem to have been constructed with unworldly precision. In a more detailed investigation of these structures, you would find that there are also other explanations that do not require alien engineering. I would note that it sometimes appears that the threshold to declare “alien assistance” seems only to require running out of other ready explanations.

However simply not understanding specifically how the pyramids were built does not instantly support the assumption that aliens had to help humans build them.

There is not yet any real physical evidence that clearly shows an alien technology at work, only speculation to attempt to create an explanation that doesn't involve human ingenuity and focused effort.

We seem very quick to attribute unexpected precision to unworldly forces however, there's been many cases in which things that were just simply not thought to be possible in a normal human sense, turned out to be quite possible with a lot of hard work and a detailed understanding of the physics involved.

Other important factors to consider when speculating about the possibility that we are actually being visited by Aliens from other worlds, is the scale of the distances involved, and the level of technology advancement needed to develop interstellar travel.

(heaver that air flight was once thought to be impossible until an understanding of the Bernoulli principle applied to a curved aircraft wing showed that a craft

could fly if it could be propelled with enough force, hence requiring the internal combustion engine the wright brothers used to move their craft..)

While it may be possible through the discovery of as yet unknown physics principles to travel faster than light, the odds are not looking promising to bet on that fact and it is likely any interstellar travel would take place at speeds much slower than light. This makes the problem of traversing huge distances a real obstacle.

As Douglas Adams said in his hilarious sci-fi book “the Hitchhiker’s Guide to the Galaxy”, “Space is big. You just won’t believe how vastly, hugely, mind-bogglingly big it is.”

The distance from our earth to even the nearest star beyond our sun, Proxima Centauri is approximately 4.2 light years. The New Horizons probe we sent to Pluto traveled at the fastest speed of any spacecraft we have built, about 16 kilometers per sec, and arrived there in nine years. Assuming the same speed and continuing on to Proxima Centauri, the one way trip would take about 80,000 years, so we have a lot of technical development to do before even that nearby star could be visited by us. Making a phone call to the nearest star using a radio wave traveling at the speed of light would only take 8.4 years to send a message and get a reply, so perhaps we could have a long slow conversation with our nearest neighbor, but there are not many stars that close and if Proxmia Centauri doesn’t have an equally developed civilization they wouldn’t hear our call or be able to send a message themselves.

History recounts that a number of influential physicists, including Enrico Fermi, one of the important physicists from the Manhattan Project that built America's first atomic bomb, were having spirited informal discussions in the summer of 1950 about UFO sightings, the potential of faster than light travel, and the possibility of life on other worlds. They were familiar with the current observations and measurements of astronomy and physics and had helped advance the field of physics, bringing fresh insights into the nature of matter and physical forces.

The sheer size of the universe, and the incredibly long time it had existed were factored into their discussions and they came to the startling conclusion that the probability of life somewhere else in the universe was clearly not zero.

In fact many of the probabilities they calculated were enough greater than 'not zero' that one of them, Fermi, after a long discussion about the topic, declared in exasperation, "where are they?". This concern has become known as the Fermi Paradox. Another way to think about it would be "Given the amount of time the universe has existed, and assuming even a small possibility of life arising elsewhere, surely we should see somebody from beyond our solar system by now.

THE DRAKE EQUATION

Astrophysicist Frank Drake was interested in trying to estimate the number of technically advanced worlds that might exist in our Milky Way galaxy. In 1961 he created an algebraic equation that utilized a series of important variables that he

believed were relevant to predicting the probability of the existence of advanced civilizations.

Brief overview of the actual drake equation.

Carl Sagan, in one of the episodes of his wonderful COSMOS series called "Encyclopedia Galactica", does a very good job of explaining the Drake equation and how it is used, I highly recommend the series in general, but this particular episode is worth watching if you would like to follow the details regarding the search for life on other worlds and the science involved.

The Drake Equation was the first focused attempt to try to quantify the possibilities of other intelligent life in the universe, and the factors used have been refined over the years as technical instruments, such as the Hubble and James Webb Telescopes, have been used to measure some of the astronomical quantities, such as the number of planets around faraway suns, that were previously only estimated and the current version of the equation used today still shows a very high probability of intelligent life existing beyond our own, but there is one factor in the equation that has not been pinned down and in a somewhat sad way could explain why we have not heard from advanced technical civilizations. That factor is the length of time that an advanced civilization is able to release detectable signals into space. The concern that that factor brings up is that we really don't have a good way to estimate how long an advanced civilization can remain stable and productive, while still advancing its technology. Using the earth as an example, our civilization only began emitting significant

radio waves at the beginning of the 20th century. Some pessimists have postulated that civilizations that attempt to significantly advance their technology developments before they have arrived at an effective worldwide management strategy for the resources required to sustain such advancement might be likely to eventually collapse from lack of resources.

As a lighter note, I wanted to mention a wild theory by Steven Spielberg in which he speculated that UFOs might not be piloted by aliens from another planet, but by our ancestors traveling back in time from the future to observe us as historians. As we have seen, there are good reasons to be concerned that interstellar travel may never be practical, but we can't yet say the same thing about time travel.

BACKGROUND/HISTORY

The historical records of apparent UFO sightings go back as far as 3600 BC.

Some of the ancient texts seem to describe strange apparitions in the sky, but it is not always clear whether they may be describing celestial events, such as comets, or actual flying machines.

However the modern era of UFO sightings is thought to have started in the 1940s.

There were a number of mid 20th century sightings that occurred within a 5 year period that seem to have launched the first "UFO reporting surge" which resulted in national awareness of the existence of unexplained aerial observations. The

first one was in 1947 when Kenneth Arnold, a private pilot of a small airplane, reported seeing 9 objects moving at high speed near Mt Rainier in Washington State. He reported they were actually “crescent shaped” and moved at a speed he estimated as several thousand miles per hour. He also stated they moved like “saucers skipping on water”. A newspaper that published his sighting misquoted him and reported that they were “flying saucers” and the phrase entered into the public awareness.

In the same year, a rancher W.W. “Mac” Brazel from Roswell , New Mexico, reported finding what appeared to be the wreckage of some sort of large device that had fallen from the sky. Military officials from the nearby Roswell Army Air Field were called and came out to inspect the debris. In a strange turn of the story, an Intelligence officer from the army base, Maj J.A. Marcel initially confirmed to the local newspaper, the Roswell Daily Record, that it was a flying saucer and told the press that they had recovered it and were going to study it. The newspaper published the story and it attracted national attention. Shortly afterwards, the military issued a statement that the item recovered was a military weather balloon. That changing explanation was viewed with suspicion as evidence of a cover up, since some the pictures that the newspaper took clearly showed huge sheets of shiny metallic foil that looked unlike any normal kind of weather balloon.

As a historical note, it took fifty years before the military admitted to what had actually been found. The wreckage was actually from a top secret cold war project called MOGUL that involved launching very sophisticated high altitude

balloons over 650 feet tall carrying sensitive microphones and other sensors. Large amounts of metallic foil were also used to create reflecting antennas and these balloons were used to try to monitor the sonic signatures from Soviet Union's nuclear tests. This particular balloon had been launched from a location near the Texas border, and unexpectedly came down in Roswell.

The Cold war era paranoia and military secrecy around anything to do with atomic weapons and the Soviet Union had set up a situation that had the Military originally think it was better to say it was a flying saucer and needed to be studied, instead of alerting the Soviet Union to the existence of the surveillance program. However, the nationwide attention that the prospect of a UFO crashing in Roswell attracted caused them to reverse course and say it was a weather balloon, even if it seemed a flimsy explanation at the time. Even if some still wanted to believe they were covering up the recovery of a flying saucer didn't matter to the military at the time as long as it kept attention away from the existence of the surveillance program.

However, the attention of the public was now captured by the concept of flying craft from other worlds and the theme became a regular staple for fiction writers and movie studios. One popular movie in 1951, "the Day the Earth Stood Still", featured occupants of a large flying saucer from another world coming to earth to warn us of the folly of developing nuclear weapons. The frenzy of interest in UFOs grew, and the number of reported sightings of UFOs began to increase dramatically, but most were found to be either mistaken or a deliberate hoaxes by

attention seekers. The April 1952 Issue of Life Magazine had a prominent article with the storyline that the UFOs were in fact spaceships from other worlds.

In July of 1952 there was a high profile set of UFO incidents over Washington, DC when radar operators at National airport and Andrews Air Force Base reported mysterious blips on their consoles that were concerning enough to dispatch fighter jets to investigate. As the fighter jets approached the locations of the radar blips, the location of the blips moved to other locations quickly at speeds that seemed to far exceed the speed of the pursuing fighters.

Newspapers across the country ran headlines on the incident, attributing the blips to flying saucers, and also highlighting the unsuccessful chase of the blips by the fighter jets. That summer was an unusually hot and humid one in Washington, DC and one of theories to explain what had happened was said to be due to a weather condition called a "Thermal Inversion", which is capable of reflecting radar in such a way that objects actually on the ground can appear to be distorted objects in the sky. This explanation was presented by the military and was generally accepted by the public at the time, in fact there was a sharp decrease in reported sightings soon after the press conference reassuring the public.

During this same period of time, extremely secret and technically advanced high altitude surveillance systems were being developed by the US to monitor the military activities of other countries. The U2 spy plane, deployed in 1955, flew higher and faster than anyone thought possible at the time and the combination

of its silver skin catching the sun at high altitudes and unexpected speed caused it to be mistaken numerous times as an UFO by ground observers.

A highly anticipated CIA report in 2014 declassifying some aspects of the U2 program estimates that more than 50% of the UFOs reported in the 1950s through the 1960s were actually sightings of the U2 Spy plane and its successor the SR-71 spy plane. Again, having the public think the weird thing they saw in the sky was a UFO, rather than a US spy plane was a convenient distraction.

The spy plane program was based at the Infamous “AREA 51” in Nevada, a long time focus of UFO enthusiasts convinced that the extreme secrecy around the base and the numerous sightings of advanced flying machines around the area were a sign of alien technology being utilized by the US military.

Unfortunately the rise of the large population of “UFO enthusiasts” and their many fringe theories have created the impression the UFO research field is not a serious area for scientific study, and there are relatively few professional UFO researchers working at prominent universities due to the stigma attached with such research.

Recent UFO history

UFO sightings have continued through the 80s, 90, 2000, and the vast majority of the cases are able to be explained by more ordinary theories other than Alien flying machines, but there were still sightings and occasional pictures or video footage that were not able to be dismissed as having a terrestrial explanation. It appears the US government did not have a unified strategy to fully investigate

the sightings that remained unexplained and once it was determined that a particular report did not seem to have a pressing national security concern, it would not be researched further. That seems to now be changing.

In December of 2017, the New York Times reported on two classified UFO sightings by Navy personnel. The first was involving the USS Nimitz in 2004 off the coast of southern California, and the second involved the USS Theodore Roosevelt which was off the east coast of the United States. The Times also released two videos, one from the incident involving the USS Nimitz, labeled “FLIR” and the other, labeled “GIMBAL” from the USS Theodore Roosevelt incident. The Washington Post then followed up with the release of another video labeled “GOFAST” from the Theodore Roosevelt incident.

The release of the classified videos by the New York Times and the Washington post and the accompanying articles set off a huge response among not only the UFO enthusiasts but also with the general public, eventually forcing an admission by the Pentagon in September 2019 that the videos were not fake, were made by naval personnel, and that the videos were, AND I QUOTE, “part of a larger issue of an increased number of training range incursions by unidentified aerial phenomena in recent years”. The Pentagon did formally release the videos to the general public in April of 2020.

I’m not going to try to show the videos today, you probably have already seen them, if you haven’t seen them and would like to, they are easily available on YouTube.

The general public's attention was captivated by the release of the video and the descriptions of the Navy incidents, and there was a lot of pressure to release more information about the UFOs. The US Congress also demanded more information as well as a yearly report on the UAP incidents and what was being done about them. In response, the office of the Director of National Intelligence prepared and released in June of 2021 a report titled "Preliminary Assessment: Unidentified Aerial Phenomena".

I should note the new term used by the Defense Department, UAP instead of UFO. This change was made to highlight the fact that it is not always clearly an actual "object" is involved in these incidents. In many cases, all that can be reported is something unexplained in the air and Unexplained Aerial Phenomena has become the updated description. This report, while light on any specific details, and containing many caveats preventing clear understanding of the precise nature of UAPs, describes that it had 144 incidents that remained unexplained, and 80 of those incidents involved observations with multiple sensors, and in most cases interrupted pre-planned training or other military activity.

It was clear that the Defense department considers UAPs to be actual objects in some cases, since they register on a variety of sensors at the same time, and that they are a potential threat to the security of the United States. No mentions of aliens are in the report, but a fairly clear assessment is stated that the capabilities displayed by UAP are not known to the US and are not thought to be possessed by our adversaries. The report also discusses steps needing to be

taken to increase funding and cooperation among various government agencies to improve future data collection and assessment of the UAP incidents.

The direction from Congress requires a yearly report on the UAP situation and steps being taken to improve our assessment and mitigation capability regarding UAP.

The first yearly report, the “2022 Annual report on Unidentified Aerial Phenomena” was released on January 12, 2023 and it shows that there has been a substantial increase in the rate of UAP reports, 247 new reports since the 2021 preliminary report, and 119 that they had not found by the time of the previous report but were still from the past period. This brings the total number of Unexplained Aerial Phenomena incidents known by the Defense Department to 510 as of August 2022. The 2022 report also describes the establishment of the new All-Domain Anomaly Resolution Office (AARO) within the department of Defense. The AARO office has a broad scope and authority across a large number of government agencies to help increase coordination of efforts to address the UAP problem.

It seems clear that the United States is finally shifting its priorities and allocating significant resources toward a coordinated effort to identify the unidentified.

Thank you.