

REVISITING THE CONVENTIONAL MEDIUM OF IDENTIFYING LIFE ON A PLANET

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In recent years a lot of star systems and planets in those systems have been discovered. Astronomers have around the world have theorized that around 1018 stars almost the size of our sun exist in the universe each with its system of planets.

The thought of this huge universe existing with only one form of intelligent being present in the vast emptiness of the universe. People earlier thought that the Earth was the center of the universe, This was quickly changed to a newer model that could explain all the workings and the orbit in the solar system. The heliocentric model was now accepted.

People now had started to think outside of the world they live in. Surely in the humongous universe, there would just be one living civilization.

FERMI PARADOX

The 'Fermi Paradox' is about the existence of aliens. It states that "if there are aliens, where are they?" humans have only been around for a few million years the universe has existed for 14 billion years, even considering the possibility the conditions in the start were not favorable for any type of birth of the universe was not hostile in the universe so life could not have been possible.

The Fermi Paradox sets results based on the information available. It sets a type of barrier in an experimental universe, like the universe we live there has not been any evidence of any kind of extraterrestrial intelligence.

The Fermi paradox uses the information of a hypothetical universe to set a barrier or an accomplishment every civilization would have to do to survive, without that either it would simply get destroyed or would be extinguished from existence itself. So, all the civilizations would have to do that task and it would decide that they would be extinguished or would live on to make the ruling civilization of the universe.

The Fermi paradox takes into account different factors and features of the universe that has been describing. For example, in our universe, the factors that would be taken into account would be the number of known intelligent civilizations, the number of civilizations that are developed towards a chosen point, and the number of extinct civilizations.

The Fermi paradox would all of the civilizations and would create a hypothetical barrier also known as the great filter, For any universe description, no matter how many living civilizations there are, the great filter can be of 3 different types.

1. First, the great filter exists and is behind us, this would mean that we have passed the filter and are

above all of the civilizations below us, this could also mean that the barrier was creating life itself, the environment in the universe is so hostile that development of life or making the jump from simple to the complex form of life, is the filter itself. This would mean that humans could be unique or one of the first civilizations to ever be in the universe.

2. In the second situation, if signs of life are visible throughout the universe and even corpses of advanced civilizations, this would mean that the great filters are ahead of us and we might be close to the end that to the start. Hereby the presence of the corpses, the civilization might think about the great filter being ahead of them and never trying to jump or fight the upcoming catastrophe.

3. In the third situation, due to the less information as we have, it can be inferred that we are alone in the universe. The universe is 90 billion light-years long, and we have not yet seen any aliens or have revived any response to the signals that we have sent. This might imply that we are alone in the universe and life in the universe might never come once Humans and life on Earth go extinct

THE SEARCH FOR EXTRA TERRESTRIAL INTELLIGENCE

To know according to the great filter were we a developing civilization stand, to prepare ourselves for anything that might come towards us. We can determine this by knowing the state of our universe in terms of the civilizations in the present past and newly forming one's.

Humans have developed a considerable amount, it has always been the only place for the existence of life that we know so far. The search for extraterrestrial intelligence would be to find and communicate through a method along with long distances with the other civilization, the search doesn't include having contact with the other civilization, that would be rather huge step in the future, but communicating and knowing that there is more intelligent life out in space would be enough to determine the place of the great filter.

There might be few circumstances that life on a planet has developed but not to such an extent that they can understand, interpret, and send back the signal that we have sent them. Also having to send signals all over the universe and checking each place for a response is difficult than identifying a place where life could probably exist. Finding a particular planet with the correct outer image would not be enough to show the existence of life, other factors do come in.

IDENTIFYING LIFE ON A PLANET

This process includes multiples steps and needs dee thinking into the field of basic geology, atmospheric composition, and out of the planet factors like the distance to the star and other activities like collisions and tidal forces.

☞ The first step in identifying a plant would be to know the easier things than can be taken outbid using the basic information taken out during the discovery of the planet. Using that we can determine the planet's distance to the star and also the presence of moons or a presence of a ring to know the number of tidal forces that affect the planet.

☞ Next, determining the size of the planet would be important as that would give an approximate of the amount of gravity, hold on the atmosphere and the magnetosphere of the planet which would be essential for the existence of life.

☞ The next step would be to calculate the temperature of the planet we already know the temperature using the star's luminosity and distance, by knowing and observing we can take out the albedo, amount of light reflected, of the planet. Using that we can compare the planet's temperature range to know if it would be suitable for life.

☞ To identify if the planet has life it would be essential to know the atmospheric composition of the planet, we can use spectroscopy in the surrounding light of the planet when it transits its star, using the spectroscopy graph we can map the elements present in the atmosphere of the planet, by doing that we can compare it to the past and present conditions of the Earth and see if it would be possible for live like humans and animals to prevail on the planet.

WHERE WE CANNOT FIND ALIENS

There are some signs of a planet that clearly say that life cannot be found here, this would be base on the ranges known to humans as the data set for this experiment is rather small and only includes one planet and lifeforms. To find anything reducing the amount of area to search is always the first thing to go with. By reducing the sample space and the negative options of our experiment we are increasing the probability of getting a positive option. The signs that are not good for life would be

☞ The solar system of the planet is too close to a place hole, this would be as the high levels of radiation is typically not a good sign for life as it can damage living cells in a body.

☞ The planet is not in the 'Goldilocks zone' of the star system this would mean that the planet would either be too hot or too cold for life.

☞ The planet is not of the right size, this would mean that either the planet is too small, it doesn't have a proper magnetosphere, and life on that planet would not be possible due to the bombarding of high energy particles. The second case would be that the planet is a giant, it would have a lot of gravitational pull and could also be a gas giant due to the immense gravity

☞ The tidal forces on the planet are too strong. The planet might have a lot of moons and would exert different tidal forces in different directions which would. The planet inhabitable due to the continuous heating of the planet.

☞ The spin of the planet is a major player in the existence of life, the spin would indicate the distribution of heat given by the sun, too low and one side of the planet heats up and creates temperature difference which is enormous too fast, it would create winds where life cannot survive

A lot of factors contribute together to ensure that life is sustained on the Earth and factors that are oblivious to most of the people contribute to ensuring that Earth is a place where life can thrive.

DEFINITE SIGNS OF FINDING EXTRATERRESTRIALS

Finding conditions that are right for life to prevail does not guarantee to find life rather some signs spell 'extraterrestrials' these signs could include a message, a satellite the crashed on Earth and had no connection.

☞ Definite signs could also include observation of artificial satellites that are revolving around the planet

☞ A heavy radio signal sent by the civilisation acmes towards Earth

☞ One more mysterious event that could indicate the presence of a civilization that is more advance the humans is discovering a planet that is orbiting nothing, or the heat signature of a star but while observing there is no star there, this would mean that there is a civilization more advanced than Humans, The seemingly space that the planet is orbiting could mean a presence of a Dyson sphere. A Dyson sphere is a contraction done around the star to observe 100% of its energy, but the civilization would get a lot of energy to use in experiments and developments that the civilization can do.

Having confirmed the presence of extraterrestrials, this would have significant sociological effects on society, from finding out that we are not alone in the universe. This would mean that humans would have to take part in much larger defence and would a better system than the current divided nations and democracy is going on. A world leader would also need to be appointed which would indeed help us communicate and make decisions concerning the extraterrestrials.

CONCLUSION

To find extraterrestrials would be like finding a needle in a haystack that is spread across millions of kilometers but finding extraterrestrial intelligence would be more like finding an ant on the Earth covered in soot. Finding extraterrestrial would be a big accomplishment on its making verbal and physical contact with the aliens and communication would be an achievement of no comparison to any done before.