

51st IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) –
The Next Steps (A4)
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THE "INVISIBLE" SIGNS OF EXTRATERRESTRIAL INTELLIGENCE

Abstract

If intelligent extraterrestrial life exists, then where are all the signs of its presence?

In order to answer this question, I first propose to imagine a similar situation but at a much lower scale. Here on Earth, certain places exist where a group of indigenous people are completely isolated from the entire developed and civilized world, such as the North Sentinel Island. While the inhabitants of the island rarely have the occasion to see some proof of our existence (like a ship or a plane), our methods of communication permanently surround them at any given time. The radio waves we use to communicate at a global level are always present around them and permanently surround the island, but the indigenous people are simply not able to detect or understand them.

The universe is so vast and the distances between solar systems are so immense, that the speed of light is too slow for an effective communication. Therefore, the communication methods we are using at the moment would not be efficient enough for an advanced civilization. This would explain why we do not notice anything tied with the existence of some kind of intelligent life. Their ways of communication might be surrounding us at this very moment, but, just like the indigenous people, we are not able to acknowledge them.

Taking into consideration all of the above, I propose the study of the Earth's age compared to other potentially habitable planets, and even to the universe itself, in order to determine the likelihood that humans are between the first intelligent life forms to ever exist, or, in other words, the probability of other intelligent life forms to exist. In addition, I propose sending an antenna into space, able to detect the potential electromagnetic footprint of the communication methods used by intelligent extraterrestrial lifeforms. Assuming that these methods are as efficient as possible, the electromagnetic perturbations we are looking for would be pretty small and they would be most noticeable between and close to areas that would be of high interest to intelligent extraterrestrial beings, such as solar systems rich in elements generally infrequent throughout the universe.

In conclusion, I intend to study the existence of extraterrestrial intelligence and find the potential changes in the electromagnetic fields, that resulted from its activity around the universe.