# SETI Redux

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A short speculative essay on possible optimal new strategies to search for evidence of present or past extraterrestrial civilizations i.e., a SETI redux. Black holes are considered the most likely location in the heavens as exotic space-time features may provide hypercomputation resources for advanced intelligence civilizations. DNA is considered as a possible area of research for evidence of extraterrestrial intelligence on our planet.

> *"Where is everybody?"*
> *-- Enrico Fermi*[1]
>
> *"There are more things in heaven and earth, Horatio, Than are dreamt of in your philosophy"*
> *-- William Shakespeare - Hamlet, 1.5. 165–66*
>
> *"They're digging in the wrong place!"*
> *-- Indiana Jones and Sallah - Raiders of the Lost Ark*

Many books and articles have been written about why humanity has not yet been visited by extraterrestrial or alien beings. Scientists and astronomers continue to give large estimates of the number of intelligent and space-faring civilizations that should exist, based on our knowledge of the size and variety of planets in the universe, yet no evidence has been found of any artifact, interstellar message, or planet or vessel with intelligent life. Thus, if we believe that we are not alone in the universe, it is likely that our approach is incorrect or that we may not be searching in the right location. Perhaps we need a new approach to SETI.

## The heavens

One proposal is that intelligent space-faring species may reside near or around black holes. The world should soon learn if a truly scalable quantum computer is possible or not. But beyond a scalable quantum computer, it is theorized that the only way to continue humanity's desire for increased computational speeds, a la Moore's Law, is to utilize exotic aspects of space-time that may occur near cosmic black holes that could allow for hypercomputation. As Tony Ord notes in his 2002 paper on hypercomputation:

> Mark Hogarth has argued that general relativity allows infinite computation in certain exotic space-times (known as Malament-Hogarth space-times). In such space-times, it may be possible to set up a computer and an observer in such a way that the observer witnesses the computer undertake an infinite number of steps within a finite time. Further examination of such systems has been undertaken by Gábor Etesi and István Németi who pay particular attention to the Malament-Hogarth spacetime predicted to occur around a rotating, electrically charged black hole – a situation that they see as quite physically plausible (pg. 29).[2]

It may also be the case that a civilization that arises on a planet closer to the center of our galaxy, would have a larger number of informative astronomical observations that would have driven faster advances in physical sciences (Figure 1). In a similar manner, a space-faring civilization near the center of the galaxy would be much closer to the super-massive black hole at our galaxy's center and thus would be able to achieve possible hypercomputation much faster than civilizations residing on the galactic periphery like our own.

## The earth

While scientists would be amiss not to search near the Milky Way's central black hole for evidence of past or present intelligent civilizations, perhaps they are also ignoring the possibility of evidence on our planet. Microsoft founder and billionaire Bill Gates has stated that "DNA is like a computer program but far, far more advanced than any software ever created."[3] Franics Crick, one of the co-discoverers of DNA, wrote in the abstract of his 1973 paper called *Directed Panspermia*:

> It now seems unlikely that extraterrestrial living organisms could have reached the earth either as spores driven by the radiation pressure from another star or as living organisms imbedded in a meteorite. As an alternative to these nineteenth-century mechanisms, we have considered Directed Panspermia, the theory that organisms were deliberately transmitted to the earth by intelligent beings on another planet. We conclude that it is possible that life reached the earth in this way, but that the scientific evidence is inadequate at the present time to say anything about the probability.[4]

British physicist Paul Davies notes in his book *The Eerie Silence*:

> Nature has already invented neatly packaged data-rich nanomachines: we call them viruses. A typical virus contains thousands of bits of information encoded in either RNA or DNA - enough for a decent message. So why not engineer trillions of viruses, package them in pea-sized microprobes, and spew them around the galaxy? Each virus would convey a message for any future intelligent life on the destination planet, the space age equivalent of a message in a bottle (pg. 112).[5]

Beyond possible evidence of information from intelligent civilizations in human DNA, many authors, academic and sensational, have discussed theories related to *ancient astronauts*, but perhaps Carl Sagan sums up best the challenges of validating these theories in his 1966 book with Iosif Shklovsky, *Intelligent Life in the Universe*:

> In any event, a completely convincing demonstration of past contact with an extraterrestrial civilization will always be difficult to provide on textual grounds alone. But stories like the Oannes legend, and representations especially of the earliest civilizations on the Earth, deserve much more critical studies than have been performed heretofore, with the possibility of direct contact with an extraterrestrial civilization as one of many possible alternative interpretations (pg. 461).[6]

Now, if we do consider the idea of possible extraterrestrial visitation in earth's antiquity, perhaps we may have an unexpected answer as to *why* there exist so many megalithic structures on the western side of South America, particularly in Peru and Bolivia (Figure 2). In this scenario, geography, latitude, and altitude are not the driving factors but, again, the human genome may provide a possible answer. In their 2019 book on the neurotransmitter dopamine, Daniel Z. Lieberman and Michael E. Long describe the benefits of the DRD4 gene 7R allele:

> Recall that genes come in different varieties called alleles. Alleles represent slight variations in the coding of genes that give people different characteristics. People who have a long form of the DRD4 gene, such as the 7R allele, are more likely to take risks. They pursue new experiences because they have a low tolerance for boredom. … Researchers obtained genetic data from the most well-known migration routes in North America, South America, East Asia, Southeast Asia, Africa, and Europe. Whey they analyzed the data, a clear pattern emerged. Among populations that remained near their origins, fewer people had a long DRD4 allele compared to those who migrated farther away. One of the migration routes they evaluated began in Africa, went through East Asia, across the Bering Strait to North America, then down to South America. That's a long way - and the researchers found that the group that made it all the way, indigenous South Americans, had the highest proportion of long dopamine alleles…. There's also evidence that people who carry the 7R allele are faster learners. … When they found themselves in an unfamiliar environment and needed to adapt to new routines to stay alive, the 7R carriers worked harder to figure things out. … Another advantage is that the 7R allele is associated with something called low reactivity to novel stressors. … Dopaminergic

personalities thrive in unfamiliar environments. In prehistoric times, they were more likely to cope well despite radical changes in their way of life (pgs. 185-189).[7]

Thus, it is suggested that an advanced space-faring civilization that might have visited Earth thousands of years ago, did not choose to land and encounter the human populations in and near Peru and Bolivia due to geography or random choice, but rather by intention. An advanced civilization might understand, or analyze human DNA in order to determine, the optimal population subset that would embrace and welcome an encounter with an unknown lifeform or perhaps even a migration off of the planet. That subset of humans would be the populations with the largest percentage of 7R allele, i.e., those that had migrated the farthest from Africa and reached deep into South America. We thus have a possible justification for the large number of megalithic structures and advanced constructions in Peru and Bolivia including Machu Picchu, Pumapunku, Sacsayhuamán, and Tiwanaku (Figure 3).

Figure 1.

*Artist conception of our Milky Way galaxy with the super-massive black hole at its center.*
Source: NASA

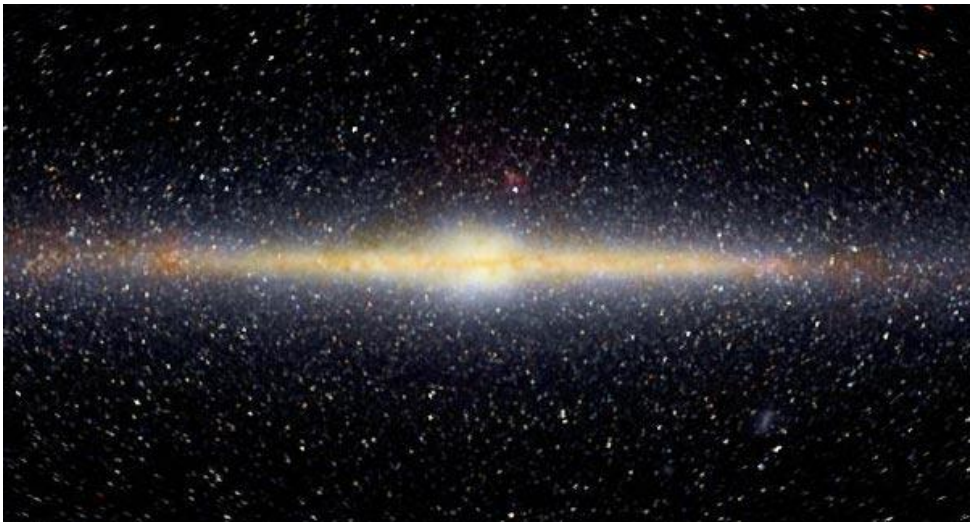

Figure 2.

*Maps with the counts of megalithic sites in Peru and the western part of South America, show a vast number of ancient constructions in and near Peru and Bolivia. But why?*
Source: https://www.megalithic.co.uk/

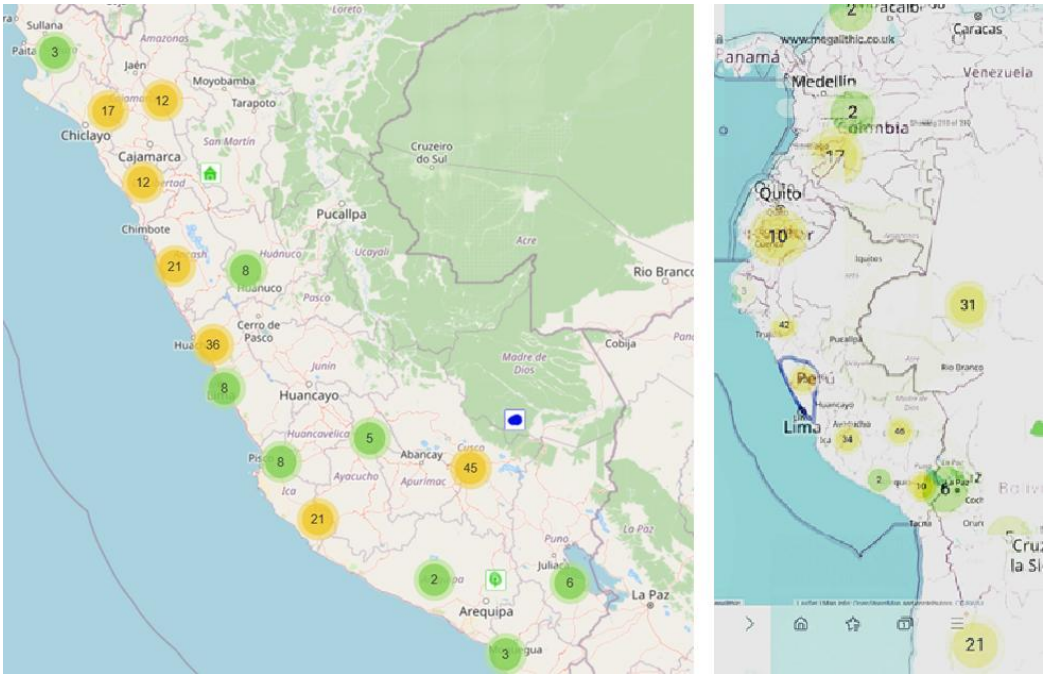


Figure 3.

*Megalithic structures appear to show signs of advanced technology at ancient sites in Peru and Bolivia including Machu Picchu, Pumapunku, Sacsayhuamán, and Tiwanaku.*
Source: Wikipedia.com

References

[1] - Jones, E. M. (1985, March). “Where is everybody?” An account of Fermi’s question. *Los Alamos National Laboratory.* Retrieved January 25, 2025, from: https://sgp.fas.org/othergov/doe/lanl/la-10311-ms.pdf

[2] - Ord, T. (2002). Hypercomputation: computing more than the Turing machine. *arXiv*. Retrieved January 25, 2025, from: https://arxiv.org/abs/math/0209332

[3] - Gates, B. (1995). *The Road Ahead*. Penguin Group. New York. p. 188.

[4] - Crick, F.H.C & Orgel, L.E. (1973). Directed panspermia. *Icarus*. Volume 19, Issue 3, Pages 341-346. Retrieved January 25, 2025, from: https://www.sciencedirect.com/science/article/abs/pii/0019103573901103

[5] - Davies, P. C. W. (2011). *The eerie silence: Searching for ourselves in the universe*. Penguin.

[6] - Sagan, C. & Shklovskiĭ, I. S. (1998). *Intelligent Life in the Universe*. Emerson-Adams Press.

[7] - Lieberman, D. Z. & Long, M.E. (2019). *The Molecule of More: How a Single Chemical in Your Brain Drives Love, Sex, and Creativity-and Will Determine the Fate of the Human Race*. BenBella Books, Inc.