

Its Big – Really BIG

Some thoughts I had on the Search

The basic problem is just the size of the thing. The universe is so damn big and even though our Milky Way is such a small part of it, infinitesimal really, yet even it has over 300 billion stars and many more planets than that. And that's not the worst of it. Our star and its gaggle of planets are stuck off in the byways of the galaxy with not much to recommend it and no way to draw attention to ourselves. There is every reason to think that we will be ignored for the remainder of our existence even if life fills the cosmos.

The [Allen Telescope Array \(ATA\)](#) is a beautiful machine and is really something to be proud of. If we as a species could stop trying to kill each other for a few minutes and spend a very small amount of our treasuries to build the full ATA and several others like it on the Earth and at least one on the moon then we might have the barest of chances of hearing something of another intelligent being. Not to be able to communicate with that being but simply to know one exists would be enough to fill our kind with hope for the next several centuries at least.

But we don't seem to be capable of even that. Do you realize that there are only five SETI stations on the face of the earth and most of them are not really serious about operating? My station required most of twenty years to get to the point I am now and I would have quit long ago if I expected some return on investment other than simply the doing of the thing. The most important undertaking of our species and it is left to a handful of people with no resources but the farsighted support of one or two rich men. We humans are not a rational group of beings are we?

I calculated the number of places in the address space available to my station. These are the places I can point the antenna, multiplied by the channels I can tune my receiver to. It came to over twelve million, and if I were to look at each one for about an hour, which is the time I spend on each one now, it would take me over 3,000 years to look through the whole list once. This was before I expanded my search area to what it is now. It's huge.

My little station in truth can't be expected to hear even the strongest beacon even if it were located on our closest star. The ATA is many times more sensitive than my station and even it has little or no chance of hearing that same beacon. Think of this; if a civilization somewhere in our galaxy wanted to advertise itself with an intentional beacon with a huge power output, and if that civilization had access to an antenna the size of the Arecibo dish and if that civilization were to steer its beam to each of the stars in the galaxy and hold it on each star for one year, then it would take 300 billion years for that ET to complete the circuit. Even if we knew we were being painted by the beacon, and that this was our year, we still have no idea what frequency they are transmitting on or from which star.

Like I said my simple system has over 12,000,000 possible places to look. Sounds hopeless I know. The odds against that first hello are immense and the rational thing would be to quit

altogether except that the payback is so large compared to the small outlay that to not do the search would be truly foolish.

I know of no way to make a smaller, cheaper system than my own that could be of any use to anyone when mine is so marginal. Its not that it's impossible to build such stations it's just that it takes so much time and effort that most people will not ever attempt to think about it. Consider this; I have made my station available on line for anyone to use and to search at any time and it's free but no one is interested. You would think that in this whole round world there would be ten or twenty people interested, but it seems not. The hope that you could find a large group of people that could build stations and then spend the time to run them seems vanishingly small.

One last thing - I have concluded that it is not possible to confirm a signal from ET. When you think about the way that the human mind works, you can see why it's impossible. If a rash astronomer were to proclaim that ET had been found he would be asked to prove it, and there is no way to prove it other than by two way communications:

“Question – Are you an ET?”

“Answer – Why yes I am. Thank you for asking”.

You can see that confirmation is impossible. The only action we are capable of doing is to falsify hits – that is to insure ourselves that any signal we see is NOT from ET. Falsification is possible and is what I do every day for every hit I come across. While confirmation is not possible, falsification is the one capability we may have to share with the folks at ATA – to help them falsify hits as they come into their system.

Finding hits is a strictly mechanical operation. You set the receiver starting frequency and the antenna tracking point and then you integrate as long as you can and then look for signals. Then you move the receiver and/or the antenna and start over again. My station does this automatically without my oversight and will usually sound the ET Found alarm once or twice a day. When the station detects a hit that's when I swing into action. Falsification is a human activity. You have to take each hit and look for man made finger prints on it. Things like; does it move in frequency like it should, is it too strong, is it modulated, is it an image, etc. These actions all take a human hand and the time to spend on each hit. This is where we could become a service to the ATA. It would take a quick link from ATA directly to stations like mine with pointing angles and frequency information. This is doable.

Thanks for letting me think out loud and I hope we can continue the conversation.

Like I said it's big, *really* big.

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