OTHER BACKWARD CLASSES

By all appearances, we are alone in the universe.

There are various theological and cosmological explanations for this, none of which would be fully satisfied or refuted were we to find mold on Europa or advanced civilizations in the stars, so I don't expect to get a real answer to this anytime soon.

For some reason we don't find solid traces of other life, though, and it often makes eschatologists afraid of nuclear war, artificial intelligence, and other disturbing endings to humankind before we manage to build a Von Neumann probe (a space nanobot which can build copies of itself and exponentially spread evidence of its makers' existence and knowledge).

Our galaxy is no stranger to second chances, though. Dinosaurs and Cambrian Explosions and other lifeforms aside, even our sun is supposedly a third-generation star. The prevailing belief is that early stars were born and died and created heavier elements, and those second-generation stars pushed things further, and now a third-generation star makes more elements and powers more reactions and lifeforms on our planet, which could then be totally erased and reassembled in the next generation. What matters is carbon, which seems particularly fortunate and chemically adaptable in ways which power all life on earth.

Personally I've always been fascinated by the few out-there astronomers who post their theories as scientific papers on arXiv, about how we might look at pulsars as an artificial interstellar guidance system, at radio pulses as solar sails being accelerated by laser beams, at potential evidence of Type 2 civilizations who have built shells around their stars. Perhaps they are out there within our own galaxy, and there is some truth to Douglas Adams's claim that Earth is *"far out in the uncharted backwaters of the unfashionable end of the western spiral arm of the Galaxy"*.

If I wrote my own cosmological paper, it would be to look at the ubiquity of silicon in the crust of Earth, the moon, the meteors, the planets around us. Is it a cosmological coincidence that one of the most common elements is the element that we discovered makes excellent semiconductors and transistors, atomic number 14, is common and unremarkable enough to form sandy beaches and volcanic rocks but also perfect for the brains of little micro nanobots? I would suggest the existence of a pre-ancient, maybe pre-Sol alien civilization, one which successfully built Von Neumann probes that propagated across our region of space and turned so much matter into silicon, that made the whole surfaces of planets electronic in a form not so different from our human concept of chips and circuits. Maybe it cycles around the edge of the galaxy over thousands of years to return to pristine planets. That electronically-replicating, galaxy-wide civilization is more possible and imaginable than one of slow and fragile biological replication. Of course it is erased now in our solar system, or its fossilized remains too tiny and decayed to distinguish from peculiar lumps of sand. Is it so farfetched?

Extending this idea further, you could imagine the universe supporting many cycles of carbon-biological and silicon-technological life, with carbon's abilities to think up computers, and silicon's abilities to rapidly build, digitize, and archive beyond the lifetime of a planet or star. How many alien worlds are currently in the carbon part of the cycle, and how short or long is it compared to the silicon part of their cycle? Are the silicon aliens' probes drifting in space? What do we make of first contact if it is much more likely to come through a carefully shielded hard drive of an old solar system which we replaced? To digital and solar-powered life, all of us carbon lifeforms must seem so temporary and bizarre and backward, eating other carbon organisms that root in their raw silicon poop, living briefly on the limits of unmaintainable DNA code and building rudimentary machines that eventually replace us.

These questions shouldn't trouble us in our day-to-day lives, but I wanted to put it out there as a theory.