

The Extraterrestrial Hypothesis Is Not That Bad

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Abstract—The Extraterrestrial Hypothesis (ETH) explanation of Unidentified Flying Objects (UFOs) has not been attractive to many scientists because of the apparent requirement to exceed the speed of light in making such trips. It is postulated that if the basis of gravity control systems were discovered, and that if the speed of light can either be raised or exceeded using such devices, then the pattern of UFO reports is consistent with the ETH. Recently, five arguments against the ETH have been advanced by Vallee in this *Journal* (1990). Each argument can be countered as follows: (1) thousands of visiting civilizations account for the wide variety and large number of reports; (2) the frequently reported similarity to homo sapiens shape may be due to historical interactions, or due to biological optimization; (3) the primitive treatment during reported abductions may be the exception from some less ethical civilizations; (4) the historical extension of the UFO phenomenon is to be expected; and (5) the near-magical reports of time, space, and light manipulation is due to high technology. Travel distance and travel time for constant acceleration and deceleration trips are displayed graphically, based on the feasibility of hyperoptic gravity control transportation systems. Convenient astronomical distance reference points are noted.

In a recent issue of this *Journal* (Volume 4, No. 1, 1990), well-known and respected UFO researcher Jacques Vallee presented five arguments against a simple extraterrestrial origin of unidentified flying objects (UFOs). The purpose of this study is to take polite issue with each of these arguments, based on some different assumptions.

That the universe includes a large number of intelligent civilizations is usually not viewed as controversial. Indeed, the classic book by Shklovskii and Sagan (1966) postulates, in some detail, that these large numbers of civilizations are likely to include some that are more advanced and some less advanced than our own. The basic problem most scientists encounter in projecting this large population into UFO visitations is the assumption that our current science, and all science of the future, will never permit travel faster than the speed of light. This is the linchpin assumption, because it is immediately clear that, if the opposite assumption is made (such as "it is very simple to travel at 10^6c if you know how to do it"), then it is hardly necessary to go through the details to imagine that one would expect a lot of visitors to Earth all the time.

It cannot be *proven* at present that it is possible to travel faster than the speed of light. However, what we can say is that all experiments accelerating

particles to high speeds (but never faster than the speed of light) have always used electromagnetic radiation to do so. This is like trying to use sound waves to propel a vehicle to supersonic speeds. Thus, it is not surprising that we have no hyperoptic records.

Most people would also agree that records of our history of science permit us to say that coherent light, which does not occur naturally, never existed on this planet until the laser was invented. Analogously, our conventionally known civilizations have never discovered how to control gravity. When they do, it may turn out that the interaction with gravity control energy sources permits travel at hyperoptic speeds. As Hynek noted (1966):

I have begun to feel that there is a tendency in 20th-century science to forget that there will be a 21st-century science, and indeed, a 30th-century science, from which vantage points our knowledge of the universe may appear quite different. We suffer, perhaps, from temporal provincialism, a form of arrogance that has always irritated posterity. (p. 329)

These analogies or quotes do not prove that hyperoptic travel is possible. However, zero-point energy fluctuation physics described by Boyer (1985), coupled with condensed charge technology studied by Puthoff (1990), along with the interpretation of gravity being merely a Van der Waals force (Puthoff, 1989), may be relevant. If these ideas are also blended with the standard Reissner-Nordstrom solution to the Einstein equation (Misner, Thorne, & Wheeler, 1973), which includes the effects of charge on the effective dielectric constant of the vacuum, values of the speed of light would be charge-dependent by virtue of being dielectric-dependent. Let us temporarily assume that travel at speeds well in excess of 3×10^8 m/sec is easily achievable (such as 10^6 times). (We will later examine possible parametric relationships between assumed travel speed, civilization density, and visitation frequency.) With this assumption in mind, let us deal with the five arguments against the ETH. Table 1 summarizes Vallee's five arguments against the extraterrestrial hypothesis, and the principal reason why each argument may not be valid. Vallee's arguments are shown in italics as follows.

Argument One: Close Encounter Frequency

"Unexplained close encounters are far more numerous than required for any physical survey of the earth."

"It is difficult to claim that space explorers would need to land 5,000 times on the surface of a planet to analyze its soil, take samples of the flora and fauna, and produce a complete map" (p. 107). Vallee later argues that the number is perhaps nearer to 50,000 close encounters due to incomplete reporting, 100,000 if correcting for other continents, and perhaps a million if corrected for population density, and another factor of 14 if corrected for time of day, leading to 14 million landings in 40 years. This is a reasonable

TABLE I
Summary of Vallee's arguments against the ETH and Wood's rebuttals

Argument Number	Synopsis	Rebuttal
1	Too many close encounters for an earth survey	Not if there are thousands of surveying civilizations
2	"Alien" body structure not alien enough	"Alien" evolution not required to be independent of "ours"
3	Treatment during abductions is primitive	Some civilizations may not have developed social skills
4	UFOs are not a contemporary phenomenon	This is just as easily an argument for the ETH
5	Manipulation of time and space is awesome	"Any sufficiently advanced technology is indistinguishable from magic" — Clarke

estimate. If we assume that each civilization is authorizing 1,000 close encounters on the average (perhaps 100 if we, Earth's occupants, appear dull, 10,000 if "we" are interesting, or if "their" bureaucracy is big), we should expect 14,000 other civilization visits in 40 years. This converts to $(14,000/365)(40) = 0.95$ visits per day, which is perhaps higher than one might expect (but which will be treated parametrically later). Furthermore, if Vallee is a bit high in his estimates, say by a factor of 100, this leads to only one visit every 100 days. Additionally, if the visitors were to use "mother ships," as have been reported extensively, rather much like we use aircraft carriers to take our tactical vehicles to a location efficiently, then one civilization's visit might easily spawn thousands of landings. The enormous variety in UFO shapes is not inconsistent with different civilization origins, and the occasional multiple separate reports of identical shapes would also be expected. In addition, motivations other than simple physical surveys can be postulated, such as extraterrestrial vacations, systematic extraction of natural materials, and, of course, the relatively recent reports of genetic attention toward either humans or animals.

If we also assume that our presence is known and that advanced civilizations do not waste much effort visiting uninhabited planets, such visitation rates should not be surprising. Exploration scenarios, which assume that all planets must be explored (Markowitz, 1966), do not take advantage of assuming that "they" know where "we" are, a feat not inconsistent either with alleged paranormal sensing or with the existence of comprehensive civilization maps.

Argument Two: Physiology

"The humanoid body structure of the alleged "aliens" is not likely to have originated on another planet, and is not biologically adapted to space travel."

Here, Vallee makes the explicit assumption that the ETH states that *independent* evolution has occurred on other planetary bodies. Independent evolution would seem to be *his* assumption and is not essential to the ETH at all. I would think that the simplest form of the ETH is as stated by Friedman (1979), "In other words, some UFOs are somebody else's spacecraft" (p. 48). Reports of homo sapiens emerging from space ships can mean one of two things: (1) the independent evolution of life forms winds up with homo sapiens, because it is very functional; or (2) the development of homo sapiens did not occur independently on different planets. More generally, one can argue that the species that have been reported in close encounters generally reflect the population distribution of the nearby universe. It is not at all clear that different surface gravity, different inclinations to the equator, different day lengths, or different stellar light intensities would guarantee substantially different final life forms. It is possible that 98% of the life forms of the universe occur right here on earth? If space travel can happen easily and often, we would expect a "transpermia" situation (summarized by Gordon, 1966) in which all life forms can readily go everywhere.

Vallee suggests that if aliens did naturally evolve to a humanoid shape, they might modify their bodies using genetic engineering to enhance their ability to work and survive in space. This idea would only have merit if the travel times were long compared to species lifetime. "Short" trips at many times the speed of light would not be important enough to warrant genetic twiddling. The fact that the physiology of some of the "aliens" conforms to ours is totally consistent with an ETH that provides for species interactions in the past or for near-identical evolutionary pathway. In either case, the occupants of the UFOs might simply represent the population distribution of the nearby universe.

Argument Three: Abduction Reports

"The reported behavior in thousands of abduction reports contradicts the hypothesis of genetic or scientific experimentation on humans by an advanced race."

Vallee assumes that such visitors would know at least as much as we do in the fundamental scientific disciplines such as physics and biology. It is certainly reasonable to assume that if they have reached us here from other planets that they know more about transportation systems than we do. However, each civilization, in principle, could be characterized by a number of attributes such as social skills, medical skills, ethics, religion, biology, physics, chemistry, psychic skills, genetics, electronics, materials sciences, and other subjects perhaps yet to be identified. It is not obvious that all these skills would proceed in the development of an advanced civilization at the same pace. There could be some who are strong on propulsion, but weak on medicine or genetics; some who are strong on paranormal, but weak on hard sciences. Current analogies might include the Australian aborigines, who

allegedly have psychic skills, but little technology; or street gangs, which have some technology, but little ethics.

The abduction reports such as those described by Hopkins (1987), if taken as accurate reports of what is actually happening, do indeed show a considerable crudity compared to even our present medical procedures, which include consideration for the patient's comfort and well-being. However, because a wide spectrum of behavior is reported, it is logical to imagine that the abductions performed in the most skillful manner would leave little memory or ill will. Thus, such abductions, if they are done very well, would never be reported and could even be the majority of them.

Argument Four: History

"The extension of the phenomenon throughout recorded human history demonstrates that UFOs are not a contemporary phenomenon."

It is startling for a believer in the ETH to grasp that, in the 9th century, some UFOs reported were vessels in the sky; in 1897, they were dirigibles; in 1946, ghost rockets; and today, the UFOs are high-tech in physics and advanced vehicle performance. One likely explanation for this observation is that there is a consistent plan to covertly mask the visits within the social structure of the civilization being visited. Not meddling with developing civilizations such as ours is a reasonable policy. "Knowledgeable researchers like Vallee, earlier, in emphasizing folklore comparisons with UFO close encounters, left the impression on some people at that time that he thought the whole thing is an illusion (Vallee, 1969). Vallee is now emphasizing the physical evidence and signatures as not imaginary at all" (Vallee, *Confrontations*, 1990). The fact that most cultures on Earth have an ancient tradition of little people who fly through the sky and abduct humans could also be totally consistent with the idea that that is precisely what has been happening. What could be more simple?

Argument Five: Physical Considerations

"The apparent ability of UFOs to manipulate space and time suggest radically different and richer alternatives. . ."

While it is true that the mastery of time and space is reflected in reports such as light beams that bend or stop in mid-air, ability to merge with or pass through solid objects, ability to shrink, grow, change shape, multiply, or accelerate enormously, all these reports need to be explained. The simple idea that "any sufficiently advanced technology is indistinguishable from magic," as advanced by Arthur C. Clarke, provides a useful frame of mind. More specifically, if the physics of zero-point vacuum energy is correct, the density of empty space contains the energy equivalent of 10^{94} g/cm³ (Misner, Thorne, & Wheeler, 1973; Puthoff, 1990, in press). This would mean that

what we treat as solid matter is only a tiny fraction of the basic energy density in a vacuum. Thus, the idea of objects merging with each other or passing through solid walls (e.g., Fowler, 1979) is not remarkable, because our "solid" objects may only be a tiny ripples of coherence in an enormous background of much denser energy.

Vallee concludes by imaginatively offering three newer hypotheses, namely earth-light, control system, and wormhole travel. The latter can actually be viewed as a special case of the ETH, providing for time travel as well as space travel. It is certainly true that the time-delay or time-shift reports from the abductions do point toward a requirement to provide for some form of time control. However, with a simple forward-running time, simple three-dimensional geometry, and Einstein's Special Theory effects valid in most circumstances, and with vehicles traveling faster than the speed of light in a vacuum some of the time, an advanced civilization could presumably interweave time and space control as they chose. This would be intellectually similar to Vallee's "wormhole hypothesis."

Expected Visitation Rate

Figure 1 is a simple-minded plot of distance and time on log scales. One line shows the speed of light, with $v = c$ labeled at the lower right side. The solid lines, sloping at about 45 degrees, plot the distance a spacecraft would travel if accelerating at a constant number of g 's halfway to its target and decelerating for the other half. Relativistic effects are not included, because there is no evidence that they need to apply to gravity-driven systems any more than the drag rise in aircraft as one approaches mach 1 applies when flying at mach 10. The reason for considering travel at constant acceleration instead of constant speed for assumed gravity control systems is due to the equivalence of acceleration and gravity, and the conjecture is that if there is a limit to gravity control effectiveness, it would express itself as a limit to acceleration value.

The distances of some astronomical reference points, such as the nearest star, the edge of the Milky Way, the galaxy in Andromeda, and the edge of the universe are shown (Kaufmann, 1985). In addition, because Zeta Reticuli 1 and 2, reported by Dickinson (1974), and The Pleiades, reported by Kinder (1987), have been identified as possible civilization origins, they are also shown. Thus, if you want to travel from here to Andromeda in this manner, it would take you 1,000 days (approximately 3×365 from the chart, interpolating on the log scale) traveling at $10^6 g$'s and, if you had done it at constant speed, you would have traveled at roughly 10^6 times the vacuum speed of light. (Actually, with the constant acceleration-deceleration assumption, acceleration in Earth g 's and time in years, the maximum speed is always $gT/4$ times the speed of light.)

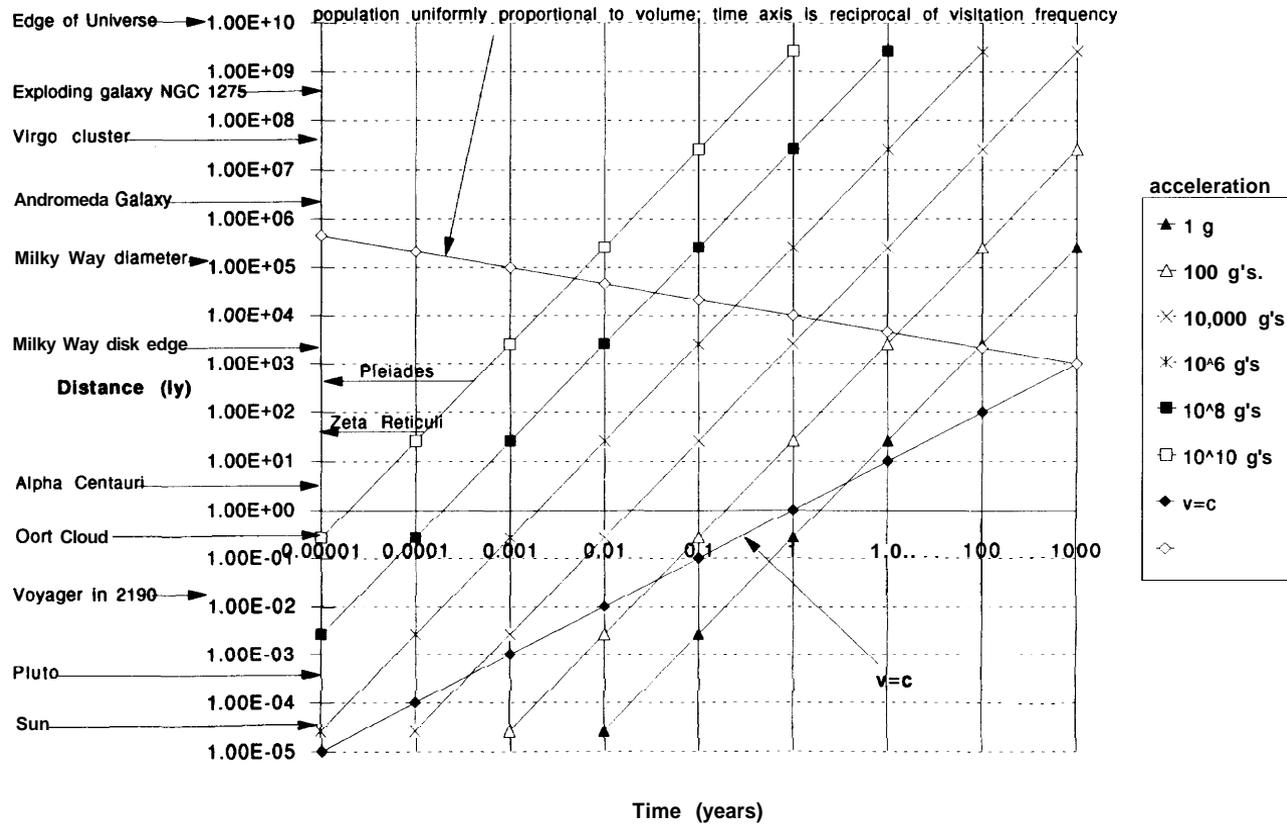


Fig. 1. Distance and travel times at constant acceleration, deceleration.

Now let us imagine that in our galaxy we have had one visit every 1,000 years from civilizations as far away as the close edge of the Milky Way, 1,000 light years (ly) away. In Figure 1, this is a point at the right side of the line, sloping downward to the right. Now let us assume that the extraterrestrial civilization density is uniform and that, if one examines a sphere with ten times the radius and each civilization knew that we were here to visit, the time between visits would be 10^3 times more frequent, or once a year. This is shown as a point at (1 yr., 10^4 ly) in Figure 1. By interpolating the acceleration lines, it can also be seen that it takes about 1 year at an acceleration and deceleration of 40,000 g 's to get here from that distance. This kind of thinking helps establish the possible technical requirements for gravity-control propulsion systems, possibly using vacuum zero-point fluctuation control or control of the space-time metric itself.

Conclusion

Whether any hypothesis is emotionally exciting or dull should not be a basis for selecting the least unlikely hypothesis. The selection or rejection of the ETH is no exception. This author concluded long ago, along with Stan Friedman and James McDonald, that the ETH was the least unlikely hypothesis. McDonald (1968) in his testimony to Congress stated, "I now regard Hypothesis 7 ("extraterrestrial devices of some surveillance nature") as the one most likely to prove correct" (p. 36). Twenty-two more years of evidence would seem to merely strengthen this conclusion.

The major assumptions, to be consistent with the ETH, are (1) it is very simple to travel at many times the speed of light, resulting in very short trip times compared to species lifetime; (2) most travelers have knowledge of the locations of other civilizations; (3) "they" have a common policy of noninterference except for a few mavericks; and (4) previous genetic interactions with homo sapiens during our known history may be responsible for similar biology in some extraterrestrials.

As mind-boggling as it may seem, the extraterrestrial hypothesis is not that bad.

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