Have you submitted your SEIs?

Have Aliens Visited Earth?

Key Concepts

1) Extraordinary claims require extraordinary evidence.
2) Absence of evidence is not evidence of absence.
3) It’s hard to prove a negative.

If an intelligent species developed spaceflight at 10% the speed of light, it could colonize our entire galaxy in ~10 Myr.

It could do this with “manned” starships or self-replicating robots.
Our planetary system might seem like an intriguing one to visit.

It has a well-behaved star & multiple planets.

One planet has spectral signatures of methane, water, and oxygen.

It’s not impossible that the Earth has been visited by extraterrestrial spacecraft.

What would constitute persuasive proof of such a visit?

Extraordinary claims require extraordinary evidence.

People have seen “unidentified flying objects” (UFOs) throughout history.

Relatively recently, some UFOs have been identified by some people as alien spacecraft.
The origin of the term “flying saucer”:

June 24, 1947: Kenneth Arnold, flying near Mt. Rainier, saw 9 UFOs that moved “as a saucer would if you skipped it across the water.”

He didn’t describe them as saucer-shaped, but reporters adopted the term “flying saucer.”

A side-effect of the “flying saucer” misnomer: lenticular clouds are sometimes misidentified as UFOs.

Known atmospheric phenomena are highly diverse.

IMO, strongly identifying a UFO as a spacecraft requires physical evidence (exotic alloys? quantum computers beyond our capabilities?)
How about the Roswell Incident?

July 1947: Rancher finds debris near Roswell, NM; much excitement because of the "flying saucer" outbreak.

Roswell Army Air Field describes it as the remains of a weather balloon.

Excitement abates.

Roswell, thirty years after:

1978: Stanton Friedman interviews witnesses & claims that the Army recovered a spacecraft (+ crew).

1994: Air Force reveals that Roswell wreckage was of a top-secret balloon experiment (Project Mogul), designed to detect Soviet bomb tests.

Of course, some people believe that the Air Force explanation is a cover-up.

Certainly, the inhabitants of Roswell have a strong economic incentive to adopt the "alien crash" theory.
Crop circles appear in grain fields (often wheat) all over the world (but often in England). Are they created by aliens?

IMO, no.

Crop circles can be made by human beings. (In fact, there are crop circle competitions.)

Why would an advanced alien being travel several light-years to do the same thing that human pranksters can do?

"Ancient astronauts" hypothesis: alien beings visited Earth early in human history, and helped cultures build large monuments.

Patterns on the Nazca desert in Peru, made ~2000 years ago.
IMO, the "ancient astronauts" hypothesis slanders early civilizations.

For instance, the Great Pyramid of Giza (sometimes attributed to ancient astronauts) is a logical evolution from earlier Egyptian structures.

There's no strong evidence for past visits by alien beings to Earth.

However...
Absence of evidence is not evidence of absence: a long-ago, temporary visit would not leave traces.

It's hard to prove a negative: the statement "Aliens never visited Earth" is extraordinarily difficult to prove.

Tomorrow's Lecture:
The Fermi Paradox

Final Exam:
Tuesday, Dec. 7, 1:30 pm