Top 10: Controversial pieces of evidence for extraterrestrial life

1. 1976, The Viking Mars landers detect chemical signatures indicative of life

2. 1977, The unexplained extraterrestrial "Wow!" signal is detected by an Ohio State University radio telescope

3. 1996, Martian "fossils" are discovered in meteorite ALH80041 from Antarctica

4. 2001, A more rigorous estimate of the "Drake equation" suggests that our galaxy may contain hundreds of thousands of life-bearing planets

5. 2001, The red tinge of Jupiter's moon Europa proposed to be due to frozen bits of bacteria, which also helps explain the mysterious infrared signal it gives off

6. 2002, Russian scientists argue that a mysterious radiation-proof microbe may have evolved on Mars

7. 2002, Chemical hints of life are found in old data from Venus probes and landers. Could microbes exist in Venusian clouds?

8. 2003, Sulphur traces on Jupiter's moon Europa may be the waste products of underground bacterial colonies

9. 2004, Methane in the Martian atmosphere hints at microbial metabolism

10. 2004, A mysterious radio signal is received by the SETI project on three occasions - from the same region of space
1. 1976, The Viking Mars landers detect chemical signatures indicative of life

Tests performed on Martian soil samples by NASA's Viking landers hinted at chemical evidence of life. One experiment mixed soil with radioactive-carbon-labelled nutrients and then tested for the production of radioactive methane gas.

The test reported a positive result. The production of radioactive methane suggested that something in the soil was metabolising the nutrients and producing radioactive gas. But other experiments on board failed to find any evidence of life, so NASA declared the result a false positive.

Despite that, one of the original scientists - and others who have since re-analysed the data - still stand by the finding. They argue that the other experiments on board were ill-equipped to search for evidence of the organic molecules - a key indicator of life.

More...

2. 1977, The unexplained extraterrestrial "Wow!" signal is detected by an Ohio State University radio telescope

In August 1977 an Ohio State University radio telescope detected an unusual pulse of radiation from somewhere near the constellation Sagittarius. The 37-second-long signal was so startling that an astronomer monitoring the data scrawled "Wow!" on the telescope's printout.

The signal was within the band of radio frequencies where transmissions are internationally banned on Earth. Furthermore, natural sources of radiation from space usually cover a wider range of frequencies.

As the nearest star in that direction is 220 million light years away, either a massive astronomical event - or intelligent aliens with a very powerful transmitter would have had to have created it. The signal remains unexplained.

More...

3. 1996, Martian "fossils" are discovered in meteorite ALH84001 from Antarctica

NASA scientists controversially announced in 1996 that they had found what appeared to be fossilised microbes in a potato-shaped lump of Martian rock. The meteorite was probably blasted off the surface of Mars in a collision, and wandered the solar system for
some 15 million years, before plummeting to Antarctica, where it was discovered in 1984.

Careful analysis revealed that the rock contained organic molecules and tiny specs of the mineral magnetite, sometimes found in Earth bacteria. Under the electron microscope, NASA researchers also claimed to have spotted signs of "nanobacteria".

But since then much of the evidence has been challenged. Other experts have suggested that the particles of magnetite were not so similar to those found in bacteria after all, and that contaminants from Earth are the source of the organic molecules. A 2003 study also showed how crystals that resemble nanobacteria could be grown in the laboratory by chemical processes.

More...

4. 2001, More rigorous calculations connected to the 1960s "Drake equation" suggests that our galaxy may contain hundreds of thousands of life-bearing planets

In 1961 US radio astronomer Frank Drake developed an equation to help estimate the number of planets hosting intelligent life - and capable of communicating with us - in the galaxy.

The Drake equation multiplies together seven factors including: the formation rate of stars like our Sun, the fraction of Earth-like planets and the fraction of those on which life develops. Many of these figures are open to wide debate, but Drake himself estimates the final number of communicating civilisations in the galaxy to be about 10,000.

In 2001, a more rigorous estimate of the number of life-bearing planets in the galaxy - using new data and theories - came up with a figure of hundreds of thousands. For the first time, the researchers estimated how many planets might lie in the "habitable zone" around stars, where water is liquid and photosynthesis possible. The results suggest that an inhabited Earth-like planet could be as little as a few hundred light years away.

More...

5. 2001, The red tinge of Jupiter's moon Europa proposed to be due to frozen bits of bacteria, which also helps explain the mysterious infrared signal it gives off

Alien microbes might be behind Europa's red tinge, suggested NASA researchers in 2001. Though the surface is mostly ice, data shows it reflects infrared
radiation in an odd manner. That suggests that something - magnesium salts perhaps - are binding it together. But no one has been able to come up with the right combination of compounds to make sense of the data.

Intriguingly, the infrared spectra of some Earthly bacteria - those that thrive in extreme conditions - fits the data at least as well as magnesium salts. Plus, some are red and brown in colour, perhaps explaining the moon's ruddy complexion. Though bacteria might find it difficult to survive in the scant atmosphere and -170°C surface temperature of Europa, they might survive in the warmer liquid interior. Geological activity could then spew them out periodically to be flash frozen on the surface.

More...

6. 2002, Russian scientists argue that a mysterious radiation-proof species of microbe may have evolved on Mars

In 2002 Russian astrobiologists claimed that super-hardy *Deinococcus radiourans* evolved on Mars. The microbe can survive several thousand times the radiation dose that would kill a human.

The Russians zapped a population of the bacteria with enough radiation to kill 99.9%, allowed the survivors to repopulate, before repeating the cycle. After 44 rounds it took 50 times the original dose of radiation. They calculated that it would take many thousands of these cycles to make common microbe *E.coli* as resilient as *Deinococcus*. And on Earth it takes between a million and 100 million years to encounter each dose of radiation. Therefore there just has not been enough time in life's 3.8 billion year history on Earth for such resistance to have evolved, they claim.

By contrast, the surface of Mars, unprotected by a dense atmosphere, is bombarded with so much radiation that the bugs could receive the same dose in just a few hundred thousand years. The researchers argue that *Deinococcus*’s ancestors were flung off of Mars by an asteroid and fell to Earth on meteorites. Other experts remain sceptical.

More...

7. 2002, Chemical hints of life are found in old data from Venus probes and landers. Could microbes exist in Venusian clouds?

Life in Venus' clouds may be the best way to explain some curious anomalies in the composition of its atmosphere, claimed University of Texas
astrobiologists in 2002. They scoured data from
NASA's Pioneer and Magellan space probes and from
Russia's Venera Venus-lander missions of the 1970s.

Solar radiation and lightning should be generating
masses of carbon monoxide on Venus, yet it is rare,
as though something is removing it. Hydrogen
sulphide and sulphur dioxide are both present too.
These readily react together, and are not usually
found co-existing, unless some process constantly is
churning them out. Most mysterious is the presence
of carbonyl sulphide. This is only produced by
microbes or catalysts on Earth, and not by any other
known inorganic process.

The researchers' suggested solution to this
conundrum is that microbes live in the Venusian
atmosphere. Venus's searing hot, acidic surface may
be prohibitive to life, but conditions 50 kilometres up
in the atmosphere are more hospitable and moist,
with a temperature of 70°C and a pressure similar to
Earth.

More...

8. 2003, Sulphur traces on Jupiter's moon Europa
may be the waste products of underground
bacterial colonies

In 2003, Italian scientists hypothesised that sulphur
traces on Europa might be a sign of alien life. The
compounds were first detected by the Galileo space
probe, along with evidence for a volcanically-warmed
ocean beneath the moon's icy crust.

The sulphur signatures look similar to the waste-
products of bacteria, which get locked into the surface
ice of lakes in Antarctica on Earth. The bacteria
survive in the water below, and similar bacteria might
also thrive below Europa's surface, the researchers
suggest. Others experts rejected the idea, suggesting
that the sulphur somehow originates from the
neighbouring moon Io, where it is found in
abundance.

More...

9. 2004, Methane in the Martian atmosphere hints
at microbial metabolism

In 2004 three groups - using telescopes on Earth and
the European Space Agency's Mars Express orbiting
space probe - independently turned up evidence of
methane in the atmosphere. Nearly all methane in our
own atmosphere is produced by bacteria and other
life.

Methane could also be generated by volcanism, the
the thawing of frozen underground deposits, or delivered by comet impacts. However, the source has to be recent, as the gas is rapidly destroyed on Mars or escapes into space.

In January 2005, an ESA scientist controversially announced that he had also found evidence of formaldehyde, produced by the oxidation of methane. If this is proved it will strengthen the case for microbes, as a whopping 2.5 million tonnes of methane per year would be required to create the quantity of formaldehyde postulated to exist.

There are ways to confirm the presence of the gas, but scientists will need to get the equipment to Mars first.

More...

10. 2004, A mysterious radio signal is received by the SETI project on three occasions - from the same region of space

In February 2003, astronomers with the search for extraterrestrial intelligence (SETI) project, used a massive telescope in Puerto Rico to re-examine 200 sections of the sky which had all previously yielded unexplained radio signals. These signals had all disappeared, except for one which had become stronger.

The signal - widely thought to be the best candidate yet for an alien contact - comes from a spot between the constellations Pisces and Aries, where there are no obvious stars or planets. Curiously, the signal is at one of the frequencies that hydrogen, the most common element, absorbs and emits energy. Some astronomers believe that this is a very likely frequency at which aliens wishing to be noticed would transmit.

Nevertheless, there is also a good chance the signal is from a never-seen-before natural phenomenon. For example, an unexplained pulsed radio signal, thought to be artificial in 1967, turned out to be the first ever sighting of a pulsar.

More...

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Have your say
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Life On Other Planets... bull!
 Fri Nov 30 20:17:42 GMT 2007 by Jake

If you actually believe that there is life on other planets, you need to stop watching so many sci-fi shows!
Actually, when it was popular to believe the Earth was flat, the ones that spoke otherwise were 'idiots'. Why does an unproven theory have to be idiotic? Have you got any proof to the contrary?

reply report this comment

Thank you! exactly!

reply report this comment

I don't know what is worse, your ignorance or your total lack of a human mind. As humans, we have always questioned our beliefs and must accept an "openmindedness" approach on life. Extraterrestrial life is not as farfetched as many believe. Millions, or billions of planets in our galaxy, let alone the universe, and you claim that extraterrestrial life is impossible? If you are religious, why would God create the entire universe and fill it with countless planets and galaxies only to bestow life on our Earth? It pains me to see so many that are still blind to what is really out there. Open your minds, not your mouths if you want the answer.

reply report this comment

Put down your bible and open up your mind.

Egocentrism is the only "reason". Yes I use the term loosely, that you can't do the math. The odds that our incompetent semi-apes are the best that can arrive is horrendously small.
I may be wrong, but at least I'm open to the possibility.

reply   report this comment

Life On Other Planets... Bull!
Thu May 01 21:08:54 BST 2008 by Dantay25

Hah... If there is intelligent life somewhere out there, I sure hope that they're more intelligent than us. We're not all intelligent enough to even realize that extraterrestrial life is a sound possibility. If an alien species were to find us now, we'd be a laughing stock. Religion, egotistic denial and some pretty profound ignorance of our universe. Oh, the shame.

Just because there's almost certainly intelligent life somewhere out there doesn't mean that we'll ever find it before the Sun blows us all to bits. So, a guy (forgot his name) found a signal from Sagittarius. Say that came from an intelligent species and they invite us round for tea and cakes. Number one: The signal might take millions of years to get to earth, so we'd be pretty late. Number two: How the heck do we get there before the crew dies? We'd have to send the celestial equivalent of an aircraft carrier, with a built-in city and ecosystem. And a million-year trip, if we go at the speed of light.

We really need faster-than-light travel.

reply   report this comment

2 more replies

Life On Other Planets... Bull!
Mon Sep 29 22:33:25 BST 2008 by Coby Gleason

Idiots? Let just think about how large our galaxy is. We are not even talking about the universe. Think of all the different planets and stars. Is it so idiotic to believe that somewhere other than Earth intelligent life developed? No it is not. Mass sightings have been documented, look up alien sightings in Stephenville, Tx if you have any doubts. Aliens exist and have been coming to this planet for thousands of
years at least that we know of. As far as being an idiot for believing in this, it would only be idiotic to believe in something that there is no evidence to support, not the other way around.

Life On Other Planets . . . Bull!
Sun Mar 08 15:10:16 GMT 2009 by woodsman5017

Actually, nobody REALLY believed the Earth was flat. The ancient Greeks had already figured out the Earth was round (and figured it's circumference, which was only a couple hundred miles off) well before anybody started sailing west.

Life On Other Planets . . . Bull!
Tue May 12 03:28:25 BST 2009 by MARTIAL ARTIST

no its not bull I promised to never get into it but ive seen alien life first hand.If you dont believe me that is fine but there are other lifeforms out there

Life On Other Planets . . . Bull!
Wed Dec 19 07:34:04 GMT 2007 by Cino

To tell the world that you believe Earth is the only planet in the Universe with life....is...well an extraordinary admittance of ignorance.

WOW, I can't believe there are still people like you alive.

Life On Other Planets . . . Bull!
Fri Dec 28 00:18:04 GMT 2007 by Jesse

Yeah, no kidding; but there will always be
those ignorant people... *cough* religious nuts *cough*

Why would a person like that be reading this anyway? Must've been joking.

Life On Other Planets... Bull!
Thu Jan 03 16:27:02 GMT 2008 by Richard Shearwood

On the other hand “Jake” is the one with the evidence (or total lack of it) supporting his argument (or rebuttal to be more precise). Anyone is welcome to believe what they wish, of course, but not to assert that it is so without evidence.

So, if you are absolutely positive that there is life on other planets (and not just statistically certain) then please let us all see your proof.

Life On Other Planets... Bull!
Wed Feb 27 02:46:27 GMT 2008 by Sweet

"jess", yes jake may be ignorant but why do you have to stereotype?

dont THINK that hes a religious nut. Im a christian and I believe in e.t life. i mean its HIS belief.

Life On Other Planets... Bull!
Tue Nov 11 20:09:53 GMT 2008 by Andy

Smoke some pot or something and open your mind up a little bit the universe goes on forever, earth is nothing but a small spec in existence. There are billions if not an infinite amount of galaxies throughout the universe. So who's not to say at least one of them has the ability to contain life. Its not that crazy if you think about it it is actually very likely and you would be an idiot to think it impossible
Life On Other Planets... Bull!
Sun Feb 03 06:42:47 GMT 2008 by David A Siegal

Jake is obviously a college graduate.

reply  report this comment

Life On Other Planets... Bull!
Fri Jun 13 07:23:55 BST 2008 by Brandon

This guy is definitely joking. The fact that he found his way to this site should be evidence enough of that, unless the concept of alien life just annoyed him so much that he went looking for a place to tell off logical minded people who realize that the universe harbors trillions of stars if not way more... Which in other words means there's no way in hell that earth is the only planet with some kind of life on it... Unless you believe God put life on only earth and just made the rest of the stars so we'd have pretty lights to look at...

reply  report this comment

Life On Other Planets... Bull!
Thu Sep 18 17:00:04 BST 2008 by Halfadozen

To think that God has created all of the Universe just for us is unintelligent. He could have created just our solar system and that thats all there is and that would have satisfied us. BUT he didn't just create our solar system or just our Galaxy he created many. And as in "Contact" if we are the only ones here it is a pretty big waste of space.

reply  report this comment

Life On Other Planets... Bull!
Thu Apr 23 23:59:03 BST 2009 by Ettenyl

This comment breached our terms of use and has been removed.
How about intelligent reasoning? Your lack of an ability to reason is the same as the person who used a high powered electron microscope to examine one grain of sand from the seashore for microbial life. He found that microbial life did indeed exist upon that one grain of sand. But before he had the opportunity to examine another grain of sand, he broke an irreplaceable part to his microscope and thus could not examine another grain of sand for microbial life. He, therefore, chooses to BELIEVE that microbial life exists ONLY on that one grain of sand since it was the only grain of sand upon which he actually saw life.

Do you suppose that perhaps his faith had blinded him to common sense reasoning?

Life On Other Planets... Bull!
Mon May 04 08:05:46 BST 2009 by Mike

I dont believe in God and I do believe in life on other planets and I would never call you an idiot for your beliefs.

Religious egocentrism always saddens me. "Love thy neighbor...only if your neighbor believes what you do". Right?

Humans are the best God could come up with? Out of everything that is, He only put life on one planet on the outer reaches of one of the Milky Way galaxy bands?

In my opinion, if God were real, we had to be either an afterthought creation or God made us and then just quit making life for some reason.

"God is dead." -Friedrich Nietzsche

While religion struggles to convince us all the earth is 5k years old and man walked with dinosaurs, the rest of REAL scientific method is moving on into quantum physics and the 11th dimension. Lets see religion explain that...
It is written take all the evidence u can and put it together and usually the most simplist answer is correct. Your evidence we have found planets and will find millions more. We know that water is in abundant in the universe and is the nursery of all our animals including us. Bacteria can hibernate hundreds of thousands of years until better conditions allow it to evolve and the main reason to believe in alien life and of some life out there simple answer we are here if it happenened here it will happen where ever it can i would say there are thousands of aliens out there if any of them have meet each other who knows