How would humans respond to first contact from an alien world?

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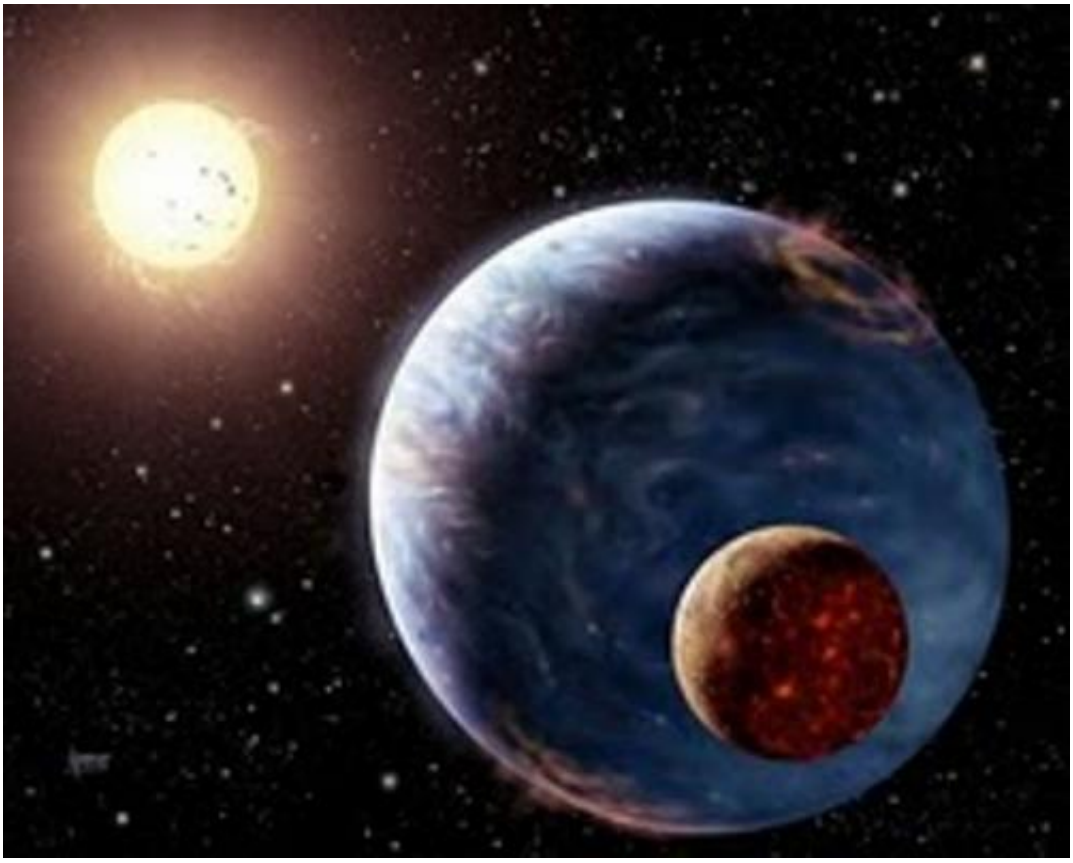

Artist concept of an exoplanet. Credit: NASA

According to Star Trek lore, it is only 51 years until humans encounter their first contact with an alien species. In the movie “Star Trek: First Contact,” on April 5, 2063, Vulcans pay a visit to an Earth recovering from a war-torn period (see the movie clip below.) But will such a planet-

wide, history-changing event ever really take place? If you are logical, like Spock and his Vulcan species, science points towards the inevitability of first contact. This is according to journalist Marc Kaufman, who is a science writer for the Washington Post and author of the book "First Contact: Scientific Breakthroughs in the Hunt for life Beyond Earth." He writes that from humanity's point of view, first contact would be a "harbinger of a new frontier in a dramatically changed cosmos."

What are some of the arguments for and against the likelihood of first contact ever taking place and what would the implications be?

"One argument against first contact is from those who say there is no other life in the Universe," said Kaufman, speaking to Universe Today via phone, "and with that is the Fermi paradox, which says that if there is so much life out there, why hasn't it visited us yet? That was first posited back in the 1950's and with everything we've learned since then, it seems rather presumptuous and Earth-centric to say that because no one has come to Earth, there is no life out there."

Kaufman argues the Universe is so vast, the number of exoplanets is so huge – with the number of exoplanets in habitable zones now gaining in numbers almost daily – and we now understand that all the makings for the building blocks of life are out in space, so it defies logic to argue there is no other life out there.

Another argument against first contact states there might be microbial life elsewhere in the Universe, but it is not intelligent. "This is where the Fermi paradox comes in even more," Kaufman said. "It certainly is true — as far as we know — that no intelligent life has made contact with Earth. But when you look at the amount of time we've been a technologically advanced society, it has only been a few hundred years. In the vastness of time, that is a pitifully small amount of time – truly

nothing."

In the immensity of cosmological time, Kaufman said, it is quite possible that microbial life emerged and evolved a billion years ago on another world and we missed coinciding with it, as civilizations could have come and gone.

"But all the makings are there and unless we want to say that Earth was made through divine creation or only through an unbelievable set of circumstances this is the only place in the Universe where life began, it just seems hugely, hugely implausible," Kaufman said.

So, Kaufman says, the best, most logical argument is that life exists beyond Earth and in some instances includes what we would consider intelligence.

"If you have microbial life and billions of planets in habitable zones, the logic says that some of them will advance like we did," Kaufman said. "There's no reason to say that evolution is exclusive to Earth. It feels very 14th or 15th century-Earth-centric to say that we are the only place where there is intelligent life."

Our continued scientific understanding, and in particular, the recent ongoing finding of so many exoplanets, has been a real revolution in our understanding of the cosmos, Kaufman said, and it is a huge boost to the logic of finding life elsewhere.

"It was hypothesized for decades, if not centuries that other planets were out there," he said. "Now that we are finding planets almost every day, from a scientific perspective, it shows us that if the science is pointing in a certain direction, you just need to have the technology and the knowledge catch up to that hypothesis."

Kaufman says that like the surge in finding exoplanets, astrobiology is likely the next area of science where breakthroughs will happen.

“Scientists almost unanimously believe there is other life out there, but we just don’t have the technology to find it yet,” he said. “Even with the recent potential cuts in NASA’s budget for planetary missions, and even if NASA is not able to send up as many missions, there is a broad movement going on in college campuses and institutes – from working on synthetic life, to studies in cosmology, and astrochemistry — all of those things are moving forward because there is a real sense that something is within reach. This area of science is just going to blossom.”

So if tomorrow (or on April 5, 2063) a spaceship shows up, how would we respond?

“On one level, I’d hope there would be a huge amount of wonder and awe and a recognition of the vastness of the Universe. But I also imagine there would be a lot of defensiveness, as well,” said Kaufman, referring to some, like Stephen Hawking, who say we shouldn’t send messages out into space — because if a more technically advanced civilization comes to Earth, the outcome for the less advanced (us) would likely be bad.

But Kaufman has hope that Earthlings would welcome a visit.

“Look at the continuing fascination of Roswell or UFOs,” he said. “Throughout history, humans have looked to the skies and thought that we’ve experienced something ‘out there’ – be it angels or gods or spaceships. There is, I believe, a deep human craving that we aren’t alone, and that would be a significant part of our response.”

More information: habitablezones.com/

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