

COME AND GET IT

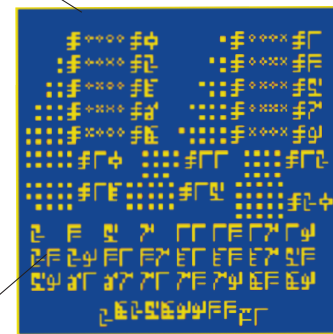
A risky invitation to extraterrestrials

By Joe Kloc

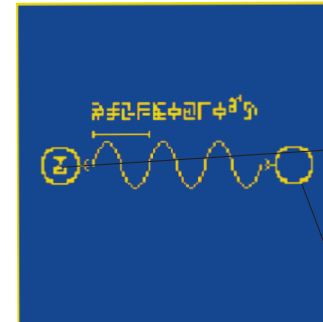
Earlier this year, researchers from the United States, China, the United Kingdom, and the Netherlands released a proposal for the “Beacon in the Galaxy,” a message designed to solicit contact from alien worlds. Unlike previous earthbound suggestions, from digging a fiery trench in the Sahara to outfitting the Eiffel Tower with mirrors aimed at Mars, the BITG, if sent, would broadcast an encoded radio message to distant star systems. Work on the BITG began in late 2019, when Jonathan Jiang, an astrophysicist at NASA’s Jet Propulsion Laboratory, was studying how advanced civilizations in the Milky Way would be affected by war, industrialization, and biotechnology. He found that even if the probability of a nuclear apocalypse were just .01 percent, few civilizations would survive much longer than humans have already. Jiang wanted to craft a “message in a bottle,” one that could convince aliens to help thwart an extinction event on Earth. It’s an idea that some of his colleagues in the search for extraterrestrial intelligence (SETI) have long described as “potentially catastrophic.”

To establish a common language with aliens, the BITG appeals to the presumed universality of mathematics. The first of the message’s thirteen parts uses binary notation to define the base-ten number system. This approach was developed a century ago by the English polymath Francis Galton, who, decades after attempting to disprove the power of prayer, suggested sending light signals to Martians in binary, reasoning that they might use different numeration if they didn’t have ten fingers. The message then encodes a sequence of twenty-four prime numbers which would be unlikely to occur incidentally. Subsequent sections contain algebraic equations, the atomic light spectrum of hydrogen, and an illustration of the chemical structure of human DNA, which was also included in a 1974 SETI transmission. That message, sent from Puerto Rico’s Arecibo Telescope to the M13 globular star cluster, will arrive around the year 27,000.

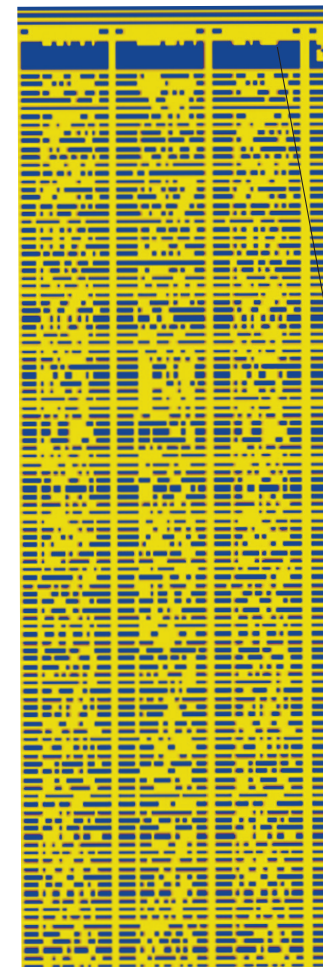
The eighth part of the message is a drawing of a man and a woman standing side by side, nude and waving. An early version of the image was created by Linda Salzman Sagan, then the astronomer Carl Sagan’s wife, who based the figures on Greek statues. In 1972, the illustration was etched in gold-anodized aluminum plaques and mounted on the *Pioneer 10* and *Pioneer 11* space probes. At the time, NASA officials demanded that the line representing the woman’s vulva be erased, but allowed the man’s penis to remain. The issue arose again five years later, when NASA sent a more ambitious message in the form of gold phonograph records on two *Voyager* spacecrafts. The discs contained audio of whale sounds, a greeting read by the Sagans’ son, and the brainwaves of Carl’s colleague and soon-to-be third wife, Ann Druyan, recorded while she thought about falling in love. The Sagans also attempted to include a detailed image of a naked man holding hands with a naked pregnant woman, but a NASA lawyer rejected it, telling the project’s design director that people find pregnant women erotic. The bodies then disappeared from official SETI transmissions for almost half a century. It was only this year, with the publication of the BITG, that the naked couple returned, the woman’s vulva still omitted.



Joe Kloc is a senior editor at Harper’s Magazine.



To encourage responses from alien civilizations, the BITG includes a diagram of two telescopes exchanging an electromagnetic wave. A decade ago, the physicist Stephen Hawking cautioned against broadcasting such messages, arguing that the recipients could be nomadic colonizers trying to mine Earth for resources, as the United States has attempted to do on asteroids since 2012. Even if the aliens aren’t spacefaring industrialists, a former SETI Institute chairman wrote, humans shouldn’t assume that they will “send us a laminated membership card along with a welcoming gift basket”; they could attack preemptively in self-defense. Lee Billings, the author of *Five Billion Years of Solitude*, said that it would be easy for aliens to “totally destroy us” if they possess the capability of interstellar propulsion required to visit Earth, noting that it would take only an object with the mass of a car striking the planet at near light speed to “kill everything.” However, he added, worry stems not only from the possibility of a direct attack, but from the notion that if aliens were to transmit a message back to Earth, it could instruct humans to inadvertently build a doomsday device.



The first scientist to report receiving an alien message may have been Nikola Tesla, who in 1901 claimed that his lab had picked up a signal from Mars. Most researchers agree, however, that aliens have yet to make contact. According to SETI lore, the first inquiry into this silence came in 1950, when Enrico Fermi, the Italian physicist then known as the “architect of the atomic bomb,” went to lunch with Edward Teller, the Hungarian-American scientist later known as the “father of the hydrogen bomb.” They discussed the hundreds of UFO sightings that had been reported across the United States. Fermi doubted the stories, but concluded that because the Milky Way contains billions of sunlike stars with planets in habitable zones, there is a high probability that Earth is surrounded by other life. So, he asked Teller, “Where is everybody?” The Serbian astrophysicist Milan Ćirković has since identified twenty-nine solutions to Fermi’s paradox: advanced societies chose not to expand; all civilizations eventually die out in a pandemic, a nuclear winter, or other mass extinction event; gods exist and didn’t create life on other planets; or, given enough time, all societies descend into totalitarianism, become locked in perpetual class struggle, or adopt a policy of avoidance toward warring tribal species such as humans.

The BITG terminates with globular cluster coordinates that reveal our galactic address, which those opposed to SETI messaging say is akin to inviting Cortés to Tenochtitlán. Those in favor counter that it is useless to hide, given the radio waves of Nazi propaganda and *I Love Lucy* episodes already hurtling through space. The debate may prove moot; the BITG might never be broadcast. And if it is, it may never reach aliens, let alone those capable of building the tools to receive it. According to the astronomer David Brin, ice-covered moons are “undoubtedly the main abode of life” for extraterrestrials, meaning most of them would have fins and flippers. The scientists behind the BITG, however, aren’t daunted by the unknown anatomies, temperaments, or economic systems of alien civilizations, writing that, “even if the aliens are short, dour and sexually obsessed—if they’re here, I want to know about them.” The line is attributed to Carl Sagan, who, years before advocating for peaceful contact with alien worlds, was a member of a top-secret team of American scientists tasked with launching nuclear missiles at the moon. ■