Is anyone planning for diplomacy with an extraterrestrial civilization?

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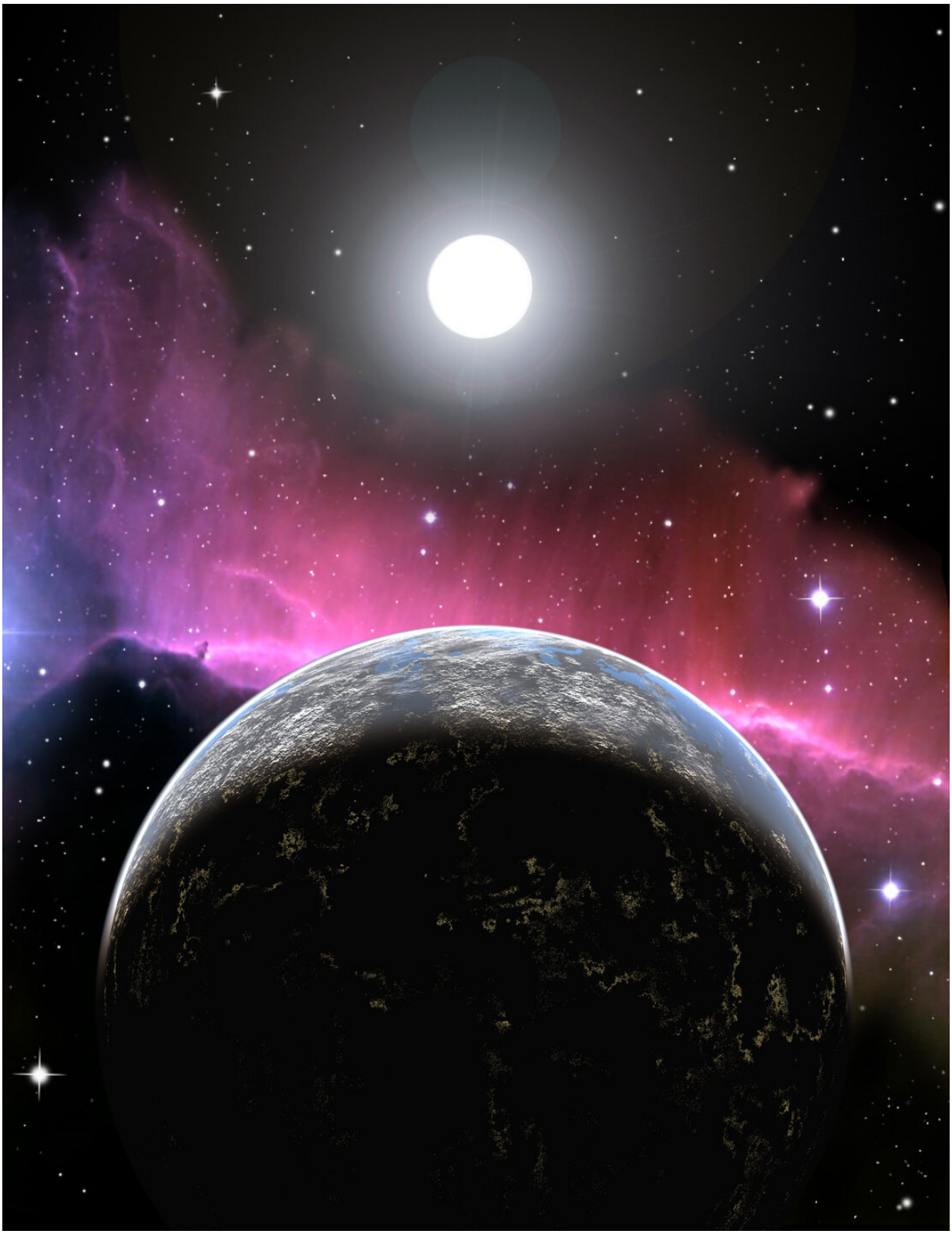

Artist impression of an alien civilization. Credit: CfA

Imagine we detect an interstellar object entering our solar system. At first, astronomers think it's just another natural interloper like Oumuamua or comet Borisov. We're warming up to the idea of visitors from other parts of the galaxy, though they've been inanimate so far.

But then, what if it becomes clear that something's different about this visitor? What if it moves unnaturally or somehow behaves purposefully? What if it takes up a stable orbit somewhere? What if, as we gather more evidence, it becomes clear that it's a probe of some sort sent to us intentionally? What if it communicates with us?

Suddenly, as if thrust into a science fiction plot, humanity is in a totally different situation. What do we do?

We can't be certain that there will ever be First Contact like this. But there could be. If not for us who are alive now, then possibly in humanity's distant future if we have one.

We can't rule this out, and a lot of thought has gone into what our response should be. Some of the thinking revolves around preparing weapons or other defensive capabilities. But at least one person thinks we should address it by developing a formal plan for diplomacy with an ETI (Extraterrestrial Intelligence.)

John Gertz, who is not a working scientist, is the author of a new paper titled simply "Interstellar Diplomacy." It is available on the pre-print server *arxiv*. Gertz is also the author of other works on SETI, and his writing has appeared in *Scientific American*.

"One way or another, contact with aliens may be imminent," Gertz writes. "There has been no planning among nations for the aftermath of

a first detection." Aftermath is a good word because if we're contacted by an ETI, it would be a dramatic shake-up for humanity. A lot could go wrong. Gertz says we need to come together on a diplomatic plan that outlines our response and our responsibilities.

SETI, the Search for Extraterrestrial Intelligence, dominates humanity's effort to detect ETIs. Gertz points out that we may very we be in the Golden Age of SETI. That's because the effort is so well-funded, according to Gertz. He mentions Yuri Milner's support for the effort, including his $100 million ten-year commitment from several years ago. Gertz also says that our technological effort has never been greater.

"Almost every major radio telescope in the world is now engaged in SETI, including China's FAST, the VLA, MEERKAT, the ATA, Parkes Observatory, and Green Bank Observatory, among others, as well as some optical telescopes," Gertz writes.

But SETI has its drawbacks. It only looks at a single star for a short period of time, and during that small window, a signal must be sent and received. Many competing thinkers have gone back and forth about SETI, arguing for and against its effectiveness. Gertz says that it's more likely an advanced civilization would send out targeted probes rather than beaming messages to planets.

"The classic SETI paradigm has been challenged by myself and others who have argued that ET's better strategy for making contact would be to send physical probes to our solar system for that purpose," he writes.

In that case, a technologically advanced civilization would've learned our languages and other things about us in order to facilitate contact. It might involve an AI that could communicate with us in real time, avoiding the long interstellar delay necessary in communicating with its builder. "An alien probe might enter into dialog with Earth in near real-time, rather

than with a star-to-star back and forth measured in centuries or millennia," he writes.

Whether first contact is a signal from another civilization or a probe that enters our solar system, there's still no agreed-upon response. And it might be critical that we respond quickly, especially if the signal comes from a great distance. For example, if it comes from 1000 light years away, then even if we respond immediately, it would be 2,000 years between the ETI sending a signal and receiving a response. Would they even be paying attention by then?

These questions are not new. Many thinkers have pondered these issues. But what if we're thrust into making a decision quickly? What if one of Earth's nations decides to respond on its own, either to a distant signal or to a visiting probe? "As matters stand now, any one country might make the decision to signal by itself and thereby encumber all humankind and its future generations," writes Gertz.

If a probe visits us, there'll be a wide variety of proposed responses. Some might want to destroy it, some might want to capture it, and some might want to treat it as some type of ambassador. And some, unfortunately, will be completely irrational and start worshiping it or some such nonsense.

The probe could act as a type of Trojan Horse. It might tell us what we want to hear and might try to dupe us into complacency while its builder makes some nefarious plans and sends a fleet our way. A thousand things could happen, though some of what we can dream up is not very likely.

But according to Gertz, whatever the nature of first contact is, we need some kind of international treaty to govern our response. Humanity will have to organize itself like never before.

"There are no easy decisions," Gertz explains. "This is why we should all be in this together, make these tough choices through representative bodies, and codify those decisions within an international treaty."

What would that treaty look like? We may already have a blueprint in the UN's Committee on the Peaceful Uses of Outer Space (COPUOS.) The UN created the COPUOS in 1959, the same year the USSR launched Luna 3 and photographed the far side of the moon for the first time.

Gertz argues that whatever the committee or body that examines this problem is called, it should be multinational and multidisciplinary. This could be a decades-long endeavor with robust debate and gaming of outcomes. And, knowing humanity, a lot of acrimonious posturing and finger-pointing.

"Members might include experts in such fields as astrobiology, astronomy, biology, computer science, cryptology, diplomacy, economics, emergency planning, epidemiology, game theory, law, linguistics, mathematics, psychology, religion, rocket science, security, and space science," he writes.

Transparency between nations is a critical piece for this hopeful committee or body, according to Gertz. Nations engaged in SETI and similar endeavors must be willing to share information equally. "The envisioned treaty should contain provisions for inspections and verification. Every SETI, space and astronomical program should be open to all signatories for intrusive inspection. Chinese scientists should have the right to receive American data streams and vis-a-versa," Gertz writes.

Gertz points out that America shares its SETI data stream with China, but there's no reciprocity. (That may be true, but there's at least one

published paper showing how China's FAST will conduct its SETI in the *Astrophysical Journal*.)

As a totalitarian nation that's resistant to democratic ideals of openness and transparency, there's a very real possibility that China could conceal a detection from others in hopes of garnering some benefit. That's Gertz's belief, and it's hard to deny completely.

But humanity has to start somewhere. And even if First Contact is a long way off, or even if it never happens, reckoning with the possibility is not unrealistic. And we don't have to solve all of the potential problems to get started.

"A first draft treaty need not be rocket science," he writes. "It does not require a large committee and years of debate to put forth at least a first draft of a proposed treaty." What might that look like?

He calls his proposal the "Treaty on Principles Governing the Activities of States in Humankind's Relations with Robotic or Biological Extraterrestrial Intelligence."

His treaty begins by outlining its purpose. Basically, it boils down to recognizing that First Contact affects every human alive now and in the future and that peacefulness and openness should be the bedrock of the treaty. It includes language like this: "Recognizing the common interest of all humankind in establishing peaceful relations with such Alien Beings."

There's a lot more, including an acknowledgement that we "… know nothing of the prevalence, nature, intention, or capabilities" of any ETIs we may encounter and that relations with an ETI should be carried out on behalf of all of humanity. He also argues that the Treaty should align with the goals of the UN. None of this seems problematic.

Gertz then presents 16 separate articles that can make up the initial treaty. They're worth a read.

Who knows where this will lead? Who knows how realistic it is? Can anyone imagine the theocratic leaders from Iran sitting down with the Hindu, space-faring humans from India and deciding on a course of action? Can anyone envision the Taliban from Afghanistan sitting across from female atheist scientists from Germany and deciding how to proceed? It seems like a bad plot for a ridiculous movie, but the only way forward for humanity is unity.

Pointing out the difficulties humans have with each other is low-hanging fruit. But to Gertz's credit, he's taken on a potentially serious issue. As he rightly points out, we can get started before we can solve all the problems inherent in such an effort.

Will we?

More information: John Gertz, Interstellar Diplomacy, *arXiv* (2023). DOI: 10.48550/arxiv.2308.14917