

PREPARING FOR AN EXPECTED PARADIGM BREAK

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Finding many planets in orbit around other stars has provoked new interest in the long-running debate about the existence of extraterrestrial intelligence. While the belief in a plurality of worlds has met the empirical standard, the belief in a plurality of *inhabited* worlds has not.

Improving capabilities for observing the characteristics of such planets are broadening the methods for discovering evidence of extraterrestrial intelligence. That discovery might not be the kind of paradigm break that Thomas Kuhn discussed in *The Structure of Scientific Revolutions*. Kuhn wrote of breaking scientific paradigms: replacing one set of physical laws with another. Discovering alien sapience would involve much more than science, raising philosophical and societal questions where laws are less certain or non-existent. While some believe that this discovery is just a matter of time, effort, and improving technology, history suggests that there will be resistance to such a paradigm change.

The timing and exact nature of discovering extraterrestrial intelligence are unpredictable. Our preparations must be based on probabilities, analogies, and disciplined speculations rather than confirmed evidence.

In this paper, I discuss standards of evidence, different scenarios of discovery, the risks of applying human models of intelligence, civilization, and behavior, varying estimates of the discovery's impact, differing ideas about organizing ourselves to deal with such a discovery, and the use of more powerful means to signal our presence. The paper closes with suggested practical steps we might take to better prepare ourselves.

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