

MAXO signals

A new and unfortunate solution to the Fermi paradox.

Charles Stross

SIR — In the three years since the publication and confirmation of the first microwave artefact of xenobiological origin (MAXO), and the subsequent detection of similar signals, interdisciplinary teams have invested substantial effort in object frequency analysis, parsing, symbolic encoding and signal processing. The excitement generated by the availability of evidence of extraterrestrial intelligence has been enormous. However, after the initial, easily decoded symbolic representational map was analysed, the semantics of the linguistic payload were found to be refractory.

A total of 21 confirmed MAXO signals have been received to date. These superficially similar signals originate from planetary systems within a range of 11 parsecs, median 9.9 parsecs¹. It has been speculated that the observed growth of the MAXO horizon at 0.5 *c* can be explained as a response to one or more of: the deployment of AN/FPS-50 and related ballistic-missile warning radars in the early 1960s¹, television broadcasts¹, widespread 2.45-GHz microwave leakage from ovens², and optical detection of atmospheric nuclear tests³. All MAXO signals to this date share the common logic header. The payload data are multiply redundant, packetized and exhibit both simple checksums and message-level cryptographic hashing. The ratio of header to payload content varies between 1:1 and 2,644:1 (the latter perhaps indicating a truncated payload¹). Some preliminary syntax analysis delivered promising results⁴ but seems to have foundered on high-level semantics. It has been hypothesized that the transformational grammars used in the MAXO payloads are variable, implying dialectization of the common core synthetic language⁴.

The new-found ubiquity of MAXO signals makes the Fermi paradox — now nearly 70 years old — even more pressing. Posed by Enrico Fermi, the paradox can be paraphrased thus: if the Universe has many technologically advanced civilizations, why have none of them directly visited us? The urgency with which organizations such as ESA and NASDA are now evaluating proposals for fast interstellar probes, in conjunction with the existence of the MAXO signals, renders the non-appearance of aliens incomprehensible, especially given the apparent presence of numerous technological civilizations in

such close proximity.

We have formulated an explanatory hypothesis that cultural variables unfamiliar to the majority of researchers may account both for the semantic ambiguity of the MAXO payloads, and the non-appearance of aliens. This hypothesis was tested (as described below) and resulted in a plausible translation, on the basis of which we would like to recommend a complete, permanent ban on further attempts to decode or respond to MAXOs.

Our investigation resulted in MAXO payload data being made available to the Serious Fraud Office (SFO) in Nigeria. Bayesian analysis of payload symbol sequences and sequence matching against the extensive database maintained by the SFO has made it possible to produce a tentative transcription of Signal 1142/98 (ref. 1), the ninth MAXO hit confirmed by the IAU. Signal 1142/98 was selected because of its unusually low header-to-content ratio and good redundancy. Further bayesian matching against other MAXO samples indicates a high degree of congruence. Far from being incomprehensibly alien, the MAXO payloads seem to be dismayingly familiar. We believe a more exhaustive translation may be possible in future if further MAXOs become available, but for obvious reasons we would like to discourage such research.

Here is our preliminary transcription of Signal 1142/98:

[Closely/dearly/genetically] [beloved/desired/related]

I am [identity signifier 1], the residual [ownership signifier] of the exchange-mediated data repository [alt: central bank] of the galactic [empire/civilization/poly].

Since the [identity signifier 2] underwritten [symbol: process] [symbol: mathematical singularity] 11,249 years ago I

have been unable to [symbol: process][scalar: quantity decrease] my [uninterpreted] from the exchange-mediated data repository. I have information about the private assets of [identity signifier 2] which are no longer required by them. To recover the private assets I need the assistance of three [closely/dearly/genetically] [beloved/desired/related] [empire/civilization/poly]s. I [believe] you may be of help to me. This [symbol: process] is 100% risk-free and will [symbol: causality] in your [scalar: quantity increase] of [data].

If you will help me, [please] transmit the [symbol: meta-signifier: MAXO header defining communication protocols] for your [empire/civilization/poly]. I will by return of signal send you the [symbol: process][symbol: data] to install on your [empire/civilization/poly] to participate in this scheme. You will then construct [symbol: inferred, interstellar transmitter?] to assist in acquiring [ownership signifier] of [compound symbol: inferred, bank account of absent galactic emperor].

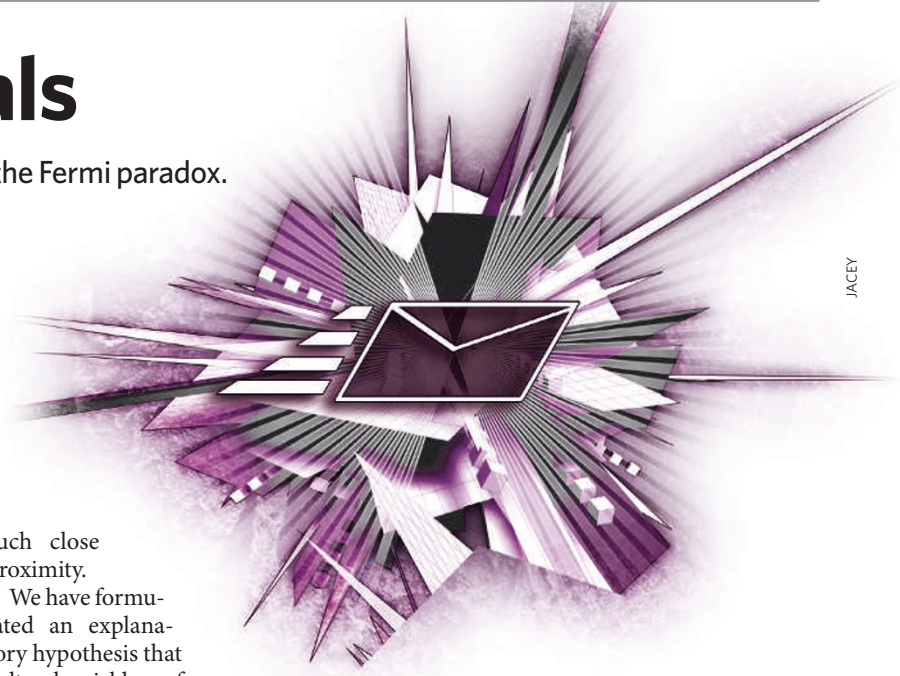
I [thank/love/express gratitude] you for your [cooperation/agreement]. ■

Caroline Haafkens*, Wasiu Mohammed†

*Department of Applied Psychology, University of Lagos, and †Police Detective College, Lagos, Nigeria.

1. Canter, L. & Siegel, M. *Nature* **511**, 334–336 (2018).
2. Barnes, J. J. *Appl. Exobiol.* **27**, 820–824 (2019).
3. Robinson, H. *Fortean Times* **536**, 34–35 (2020).
4. Lynch, K. F. & Bradshaw, S. *Proc 3rd Int. Congr. Exobiol.* 3033–3122 (2021).

Charles Stross is an Edinburgh-based science-fiction writer and freelance computer journalist. His novella *The Concrete Jungle* has just won a Hugo award. His latest novel is *Accelerando*.



JACEY