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SETI I - Technical Aspects (1.)

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SHORT-PULSE SETI

Abstract

While most optical SETI experiments are configured to detect nanosecond pulses, the majority of their counterpart radio searches integrate for seconds to minutes, looking for unchanging narrow-band carriers or slowly pulsed modulation. The former approach is suggested as an effective way to stand out against stellar photon noise, while the latter approach is dictated by the dispersive effects of the interstellar medium as well as the high visibility of narrow-band signal components.

In this paper, we consider effective signal strategies for those that produce, rather than simply search for, optical and radio beacons – signals that are designed to elicit responses from technological civilizations. By considering the communication problem from the point of view of the transmitters, rather than the receivers, we deduce some likely signal characteristics for beacons, and concommitant new strategies for SETI.