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LIMITS ON INTERSTELLAR MESSAGES

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Despite the fact that major efforts have been expended on passive searches for extraterrestrial signals, rather little actual “transmissions” to potential alien recipients have taken place. These have generally been in the form of simple graphics depicting such things as our appearance, location, and biological construction.

In this paper, we liken these early efforts to the first uses of the telegraph and telephone. Looking to both our future, and the likely capability of advanced extraterrestrials, we consider (a) what are the fundamental technical and astronomical limitations to interstellar messaging – in other words, how many “bits” could we (or they) actually send – and (b) what might be a likely type of “message,” given that the time-of-flight between stars will most probably limit communication to one-way transmissions.