

IAC-09-A4.1.08
THE DAY THE EARTH STOOD OUT

by H. Paul Shuch
Executive Director Emeritus, The SETI League, Inc.
121 Florence Drive, Cogan Station PA 17728 USA
paul@setileague.org

ABSTRACT

In a 12 December 2008 publicity stunt, 20th Century Fox, producers of The Day the Earth Stood Still (the 2008 cheesy remake, not the 1951 cheesy original) beamed their science fiction opus toward Alpha Centauri, our nearest stellar neighbor. A Fox spokesman called it the first "galactic motion-picture release." Wide discussions ensued within the SETI community as to the technical feasibility and societal implications of such interstellar transmissions. Many opined that the transmission could not possibly be detected (four years hence) by its intended audience (four light years distant). Others argued that we can not place limits on extraterrestrial technology. This paper explores that question from the perspective of a microwave communications engineer, operating within the currently known laws of nature. A rigorous link analysis is presented, which attempts to determine the optimum receiving system design which might be capable of intercepting and demodulating this particular interstellar message. We conclude that the challenges of reception, although clearly not insurmountable, are daunting to even the most technologically advanced extraterrestrial civilizations which our (admittedly limited) human imaginations can conceive.

KEYWORDS

Active SETI, interstellar transmission, TVRO uplink, microwave receiver, link analysis