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# Message in a Bottle

**Project: METI** **PI: Dr. H. Paul Shuch, Chief Engineer, Microcomm (paul@microcomm.net)**

**Rationale:** For more than fifty years, the science known as SETI (Search for Extraterrestrial Intelligence) has monitored the electromagnetic spectrum for direct evidence of other technological civilizations. In the face of continuous null results, many have suggested that we on Earth may have to initiate contact with our cosmic companions, by deliberately beaming powerful transmissions toward nearby potential life sites. METI (Messaging to Extraterrestrial Intelligence) is considered a reciprocal activity to SETI, which seeks the same result through adopting the role of active, rather than passive, communications partners.

**Strategy:** The present project seeks to direct interstellar messages toward known nearby sunlike stars having confirmed exoplanets of Earth mass or slightly greater, orbiting within or near the habitable zones of their stars. Transmission format will be crafted both to emphasize artificiality and to facilitate ready decoding of information content. Broadcasts will incorporate high transmitter power and narrow beamwidth from the highly directional Jamesburg earthstation. The research will be commercially funded by inviting the public to contribute message content for a modest fee.

**Co-investigators:**

- Lone Signal LLC
- Blue Marble Space Institute of Science
- Space Systems Lab, UC Berkeley

**Project Milestones, Technology Readiness Levels:**

- Review and analysis of the METI literature (TRL 1)
- Selection of candidate stars with known exoplanets (TRL 2)
- Preliminary link analysis for nearest candidate star (TRL 3)
- Selection and acquisition of uplink hardware (TRL 4)
- Public solicitation for message content (TRL 5)
- Design of interstellar message (TRL 6)
- Design of modulation scheme and information format (TRL 7)
- Programming ephemeris, testing tracking system (TRL 8)
- Interstellar transmission (TRL 9)

**Current TRL = 3**

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**Keywords: Search for Extraterrestrial Intelligence, SETI, Messaging to Extraterrestrial Intelligence, METI**