

47th IAA SYMPOSIUM ON THE SEARCH FOR EXTRATERRESTRIAL INTELLIGENCE (SETI) –
The Next Steps (A4)
SETI 1: SETI Science and Technology (1)

Author: Mr. Adam Crowl
Initiative for Interstellar Studies, Australia, adam@crowlspace.com

STRATEGIES FOR COMPLETE GALACTIC SURVEYS

Abstract

An often repeated concept in SETI discussions, particularly the Fermi Paradox, is that civilizations will completely survey their home Galaxies. The timescale is typically estimated to be millions of years, but the exact strategy for surveying 100 billion stars isn't often explored. In this work several options are discussed, possible limits on maximum distances per hop and a possible energy saving strategy - close stellar flybys - examined. The maximum speed for using stellar flybys to circumnavigate the Galaxy is computed and is surprisingly high. An often discussed option is Self-Replicating Probes. The assumption that Self-Replicating Probes will be obvious and abundant, and thus Fermi's Paradox can be invoked, is challenged and their impact on available mass in star-systems is critically examined using the work of Boyce [1979].