

1086-VO-1361 **Amanda M Kovacs***, 402 N Woodward Dr., Massapequa, NY 11758. *An Empirical Study on the Iteration of the Total Stopping Time of $3x+1$ Iterates.*

The $3x+1$ conjecture involves the iteration of the Collatz function defined by taking an odd integer n to $(3n+1)/2$ and an even integer n to $n/2$. The total stopping time function $\sigma_\infty(n)$ of a positive integer n is defined to be the minimal number of iterations of the Collatz function needed to reach the value of 1. If no such minimal number exists, then it has a value of ∞ . The $3x+1$ conjecture then states that for all positive integers $n > 1$, $\sigma_\infty(n)$ is finite. There has been much work done on the iteration of the Collatz function, however, very little is known about the iteration of $\sigma_\infty(n)$. With the use of Maple, we investigate the behavior of the iteration of $\sigma_\infty(n)$ and how it compares to the properties of the Collatz function. (Received September 21, 2012)