1023-Z1-17 **H Vic Dannon*** (vick@adnc.com), CA. *Cantor's Set and the Continuum Hypothesis.*

The continuum Hypothesis says that there is no set $X$ with $CardN < CardX < 2^{CardN}$.

The assumption that $CardN < 2^{CardN}$, seems plausible by the inequality $n < 2^n$, until we recall that in the limit, as $n \to \infty$, a strict inequality such as $<$, has to be replaced with $\leq$ , and we have $\lim n \leq \lim 2^n$. Is the inequality $CardN < 2^{CardN}$ indeed strict?

We are inclined to believe that there are many more real numbers than natural numbers. This belief is enhanced by the use of the terms "continuum" and "discrete", and it seems that the continuum should be greater than the discrete.

But we also know of the length-less Cantor Set that is almost a void in the interval $(0, 1)$, that has "as many" numbers as the continuum. The nowhere dense Cantor Set proves that measure and cardinality are unrelated concepts. In the case of the Cantor Set, $2^{CardN}$ is the power of a rather discrete set.

Apparently, Cantor constructed his set while attempting to find a cardinality between $CardN$, and $2^{CardN}$. But his investigation did not exhaust the properties of the set. We show that the Cantor set is related to the Continuum Hypothesis in some unexpected way. Posted to www.gauge-institute.org. (Received May 25, 2006)