1090-03-91 **W.M. Phillip Hudelson*** (phil.hudelson@gmail.com), 411 Waupelani Drive, APT A-301, State College, PA 16801. *Strong separations and Kolmogorov complexity.*

We prove using a forcing argument a new strong separation for partial randomness, which is equivalent to the following non-extraction result for Kolmogorov complexity: Let $f : \mathbb{N} \to [0, \infty)$ be a recursive and unbounded function such that $f(n+1) \leq f(n) + 1$ for all $n$ and $\lim_{n\to\infty}(n - f(n)) = \infty$. Then there is an $X$ such that $\mathrm{K}(X \upharpoonright n) \geq f(n)$ for all n, but no $Y$ recursive in $X$ satisfies $\mathrm{K}(Y \upharpoonright n) \geq f(n) + 2\log_2(f(n)) + O(1)$ for all $n$. Here $X$ and $Y$ are infinite sequence of 0's and 1's, $X \upharpoonright n$ denotes the length $n$ initial segment of $X$, and K denotes prefix-free complexity. This theorem generalizes the theorem of Miller (*Advances in Mathematics*, 226 (1): 373–384, 2011) that there exists a Turing degree of effective Hausdorff dimension 1/2. (Received February 20, 2013)