1078-11-160   **Carl Pomerance***, Mathematics Department, Dartmouth College, Hanover, NH 03784. *The range of Carmichael's function.* Preliminary report.

Carmichael's function assigns to a natural number n the order of the largest cyclic subgroup of the unit group mod n. It is nearly as ubiquitous as Euler's function and it seems one should try and understand it as well as possible. In particular, what can be said about its range? After work of Erdős, Schmutz, and myself, we know the number of values in $[1, x]$ is bounded above by a function of the shape $x/(\log x)^c$, with $0 < c < 1$. (It is trivially bounded below by $x/\log x$.) Friedlander and Luca worked out a numerical value of c of about 0.057. In the current project, which is joint with Florian Luca, we improve this value of c to the Erdős–Tenenbaum–Ford constant $0.086\ldots$, we give a heuristic that this is best possible, and we rigorously find a lower bound for the count of about $x/(\log x)^{3/5}$. (Received December 05, 2011)

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