1046-11-308 **Penny C Ridgdill*** (ridgdill@math.umass.edu), 83 Crescent St, Northampton, MA 01060. *On the Frequency of Anomalous Primes for Elliptic Curves.* Preliminary report.

For an elliptic curve E, a prime is called anomalous for E if $a_p = 1$, where $a_p = p + 1 - \#E(F_p)$. We would like to know how often we can avoid such primes. We know that for non-cm curves this happens finitely often due to a result of Serre's. By looking at the images of the (mod p) Galois representation of the curve, and looking at when those images are trace 1 free, we are able to classify when we are able to avoid $a_p = 1$. (Received August 25, 2008)