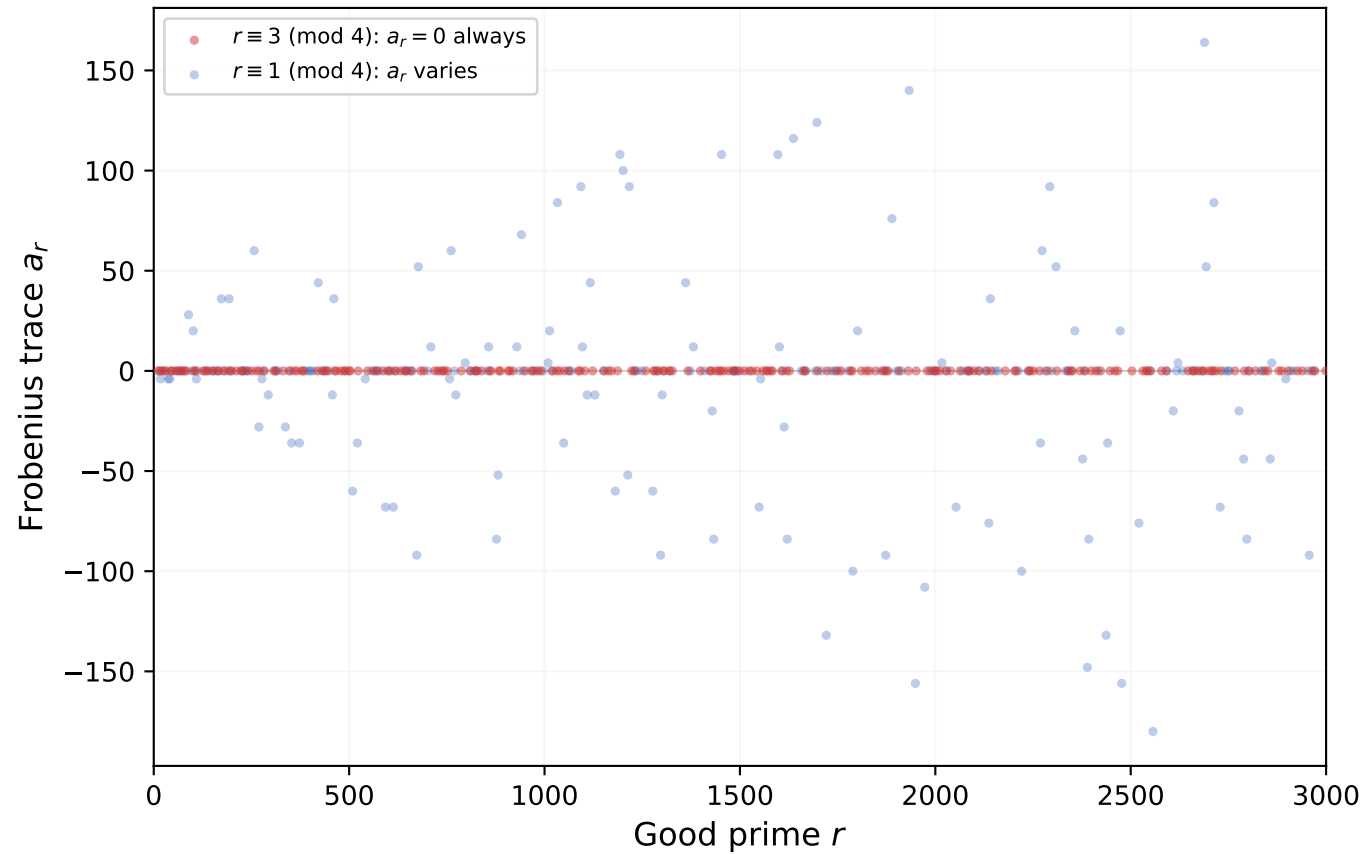(a) Trace vanishing law for $(p, q) = (3, 7)$ — (b) Trace distribution for $(p, q) = (3, 7)$

Legend (a): $r \equiv 3 \pmod 4$: $a_r = 0$ always; $r \equiv 1 \pmod 4$: a_r varies

Legend (b): $r \equiv 1 \pmod 4$; $r \equiv 3 \pmod 4$: all at 0

216 primes (all $a_r = 0$)