1094-20-21   **Ronald Mark Solomon*** (`solomon.1@osu.edu`). *Recognizing abelian Sylow subgroups.*
Navarro and Tiep recently provided an elementary affirmative answer, for primes different from 3 and 5 to Brauer's question: Can abelian Sylow subgroups be detected from the character table of a finite group G? We report on the following extension of their work to cover these two primes.

Theorem. *Let G be a finite group and $p \in \{3, 5\}$. Suppose that every p-element of G is p-central. Then*

$$O^{p'}(G/O_{p'}(G)) = S_1 \times \cdots \times S_r \times H$$

where H has abelian Sylow p-subgroups, $r \geq 0$, and S_i is a nonabelian simple group with $S_i \cong Th$ if $p = 5$; while, if $p = 3$, $S_i \cong Ru$ or $S_i \cong J_4$ or $S_i \cong {}^2F_4(q_i)$ with $q_i + 1$ divisible by 3 but not 9. (Received July 11, 2013)