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Risto Atanasov* (ratanasov@email.wcu.edu), Department of Mathematics and Computer Science, Western Carolina University, Cullowhee, NC 28723, and **Mark Budden, Joshua Lambert, Kyle Murphy** and **Andrew Penland**. *On Certain Induced Subgraphs of Paley Graphs.*

Since the advent of Ramsey Theory in the 1930's, Paley Graphs have played an important role in the determination of lower bounds for diagonal Ramsey numbers due to their randomness. The construction of Paley graphs (whose vertices are identified with finite field \mathbb{F}_q) leads to several natural induced subgraphs worth considering. We consider the subgraphs induced on the squares $\mathbb{F}_q^{\times 2}$ and the subgraphs induced on $\mathbb{F}_q^\times - \mathbb{F}_q^{\times 2}$. We describe their basic properties, demonstrate their utility in simplifying the determination of clique/independence numbers for Paley graphs, and address the determination of their diameters. (Received September 16, 2014)