1060-05-236 **Stefaan De Winter**, Department of Mathematics and Computer Algebr, Ghent University, 9000 Gent, Belgium, **Felix Lazebnik*** (lazebnik@math.udel.edu), Department of Mathematical Sciences, University of Delaware, Newark, DE 191716, and **Jacques Verstraëte** (jacques@ucsd.edu), Department of Mathematics, University of California, 9500 Gilman Drive, La Jolla, CA 92093-0112. *An Extremal Characterization of Projective Planes.*

We prove that amongst all n by n bipartite graphs of girth at least six, where $n = q^2 + q + 1 \geq 157$, the incidence graph of a projective plane of order q, when it exists, has the maximum number of cycles of length eight. This characterizes projective planes as the partial planes with the maximum number of quadrilaterals. (Received March 30, 2010)