1112-11-227 **Tathagaata Basak*** (tathagat@iastate.edu), 450 Carver Hall, Iowa State University, Ames, IA 50011. *Modular lattices from finite projective planes.*

Let q be a prime power. Using geometry of the finite projective plane $\mathbb{P}^2(\mathbb{F}_q)$ we construct a Hermitian Lorentzian lattice L_q of dimension (q^2+q+2) defined over a certain number ring that depends on q. We show that infinitely many of these lattices are modular, that is, the dual lattice of L_q is isometric to a scaled copy of L_q. Under certain conditions on q, the Lorentzian lattice L_q yields an even self dual positive definite $2q(q+1)$ dimensional $\mathbb{Z}$-lattice M_q whose automorphism group contains the automorphisms of $\mathbb{P}^2(\mathbb{F}_q)$. General conjectures about prime numbers imply that there are infinitely many such prime numbers $q = 3, 47, 59, 71, 131 \cdots$. We find that M_3 is the Leech lattice and automorphism group of the Lorentzian lattice L_3 seems to be closely related to the monster simple group. (Received August 05, 2015)