Abstract Submitted
for the HAW05 Meeting of
The American Physical Society

Θ^+ Search with $\gamma n \to pK_s^0K^-$ at Jefferson Lab NATHAN BALTZELL, DAVID TEDESCHI, University of South Carolina, CLAS COLLABORATION — Two photoproduction experients in search of the Θ^+ pentaquark have been conducted by the CLAS Collaboration in the last year at Jefferson Lab. Although the one on hydrogen has already reported finding zero evidence, theoretical estimates suggest that photoproduction on the neutron is an order of magnitude more likely. The other experiment by CLAS, with a deuterium target, has analyzed a variety of final states produced off the neutron. This talk will present an analysis in search of the possible reaction $\gamma n \to \Theta^+K^-$, with the pentaquark's decay to pK_s^0. Produced with a tagged photon beam of endpoint energy 3.6 GeV, the $pK^0K^-(p)$ final state is completely reconstructed by detecting the $\pi^+\pi^-$ decay of the neutral kaon and using missing mass for the proton. With well defined strangeness, no charged meson background, and a fully reconstructed final state, this channel is an important place to look for the Θ^+.

Nathan Baltzell
University of South Carolina

Date submitted: 26 May 2005 Electronic form version 1.4