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AT URBANA-CHAMPAIGN

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Dr. Lawrence S. Cardman  
Associate Director for Physics  
Thomas Jefferson National Accelerator Facility  
23000 Jefferson Avenue  
Newport News, VA 23606

Dear Larry,

We are writing to ask for your help in planning the next stage of the G0 experiment. Especially given the very interesting confluence of the SAMPLE measurement with preliminary results from the HAPPEX and PVA4 measurements (as presented at the Fall DNP meeting), we are excited to learn more about the neutral weak form factors of the proton. We believe backward angle measurements are now particularly important and that G0 can make a critical contribution to these studies.

Let us first update you on progress on the experiment. At this time we expect to be able to release a preliminary result for the forward angle measurement on the February – March timescale (allowing time for cleanup after our January collaboration meeting). We have made very good progress in understanding our backgrounds, in using the yields to weight fits to the asymmetry spectra, and in extracting asymmetries from detector 15 with its range of  $Q^2$  values. We are also making good progress on preparations for the backward angle run. The CED/Cherenkov detector assemblies are nearing completion; light yields match our expectations. After extensive prototyping, assembly of the production electronics boards is beginning in Grenoble and at Louisiana Tech. We have gone through the subsystems in an integration check and a final budget was recently passed to Allison Lung.

As you know, we are scheduled for our first backward angle measurement beginning in December 2005. At the summer 2005 PAC meeting, we plan to request that additional time for a run with a hydrogen target only be added on to the end of the approved run. It is possible this request would be for the lowest beam energy proposed, 400 MeV, and it seems unlikely that experiments in other Halls could run concurrently. However, there should be a beneficial increase in efficiency with single hall operation. After completing our initial analysis of the forward angle data, we will work to optimize the potential physics output from backward angle running. We would like to work with you to come up with the most reasonable overall plan for these measurements; we are certainly willing to work with the laboratory to try to secure additional funding from the DOE for such beam time should you request that we do so. At this time we are asking simply that you be willing to re-consider the tentative schedule for the first half of calendar 2006 should the PAC support our request.

Thank-you for your consideration.

Yours sincerely,

G0 Executive Committee

David Armstrong  
Larry Lee  
Greg Smith

Jacques Arvieux  
Allison Lung  
Steve Williamson

Doug Beck  
Mark Pitt

Betsy Beise  
Phil Roos

c: C. Leemann, A. Thomas, R. Ent