

## **Dear Colleagues:**

The year 2010 is coming to a close and it is fitting to take a look back at some of the accomplishments we all have achieved together.

I like to begin by welcoming new members and new institutions to the CLAS collaboration. They have made the collaboration stronger this past year as has also been evident in the increased participation at collaboration meeting. The most recent CLAS meeting in November had over 130 registered participants, an increase of over 20% compared to the November meeting in 2009.

The collaboration had a good harvest of publications in refereed journals, 8 in total including 4 in PRL/PLB. Several more have been submitted for publication. They span the physics spectrum from nuclear interactions, hadron spectroscopy, and deeply virtual processes. Critical in this process have been the reviewers in the physics analysis and the ad hoc committees who dedicated many hours to help achieve the final results and well-developed papers. Another measure of progress is the 145 talks presented at conference and workshops (with thanks to the CSC for keeping track of this!), over 100 of them invited. It is also good to see that many talks were given by graduate students and postdocs.

## **The 6 GeV program:**

In course of the year we carried out an experimental program with one major run group of five individual experiments (g9b-FROST) that completed the data taking of the  $N^*$  program with polarized photon beams on polarized proton targets. This marks the completion of a major milestone, the world's first complete experimental program in the search for "missing" baryon states. In several final states, those containing open strangeness, differential cross section and 15 polarization observables were measured for each kinematic point taken together the g1, g8, g10, and g9a,b run groups. These data allow a model-independent determination of the production amplitudes, the holy grail in  $N^*$  physics for the past several decades. Now it is up to graduate students and senior researchers to dedicate their energy and resources and fulfill the promise of the  $N^*$  program by analyzing this tremendous amount of collected data, and to extract the underlying physics. The 2nd PRIMEX run, a precision experiment of the pi-zero live time was also completed, and the eg5-TPE run is currently underway. TPE is the first experiment that uses a mixed electron-positron beam to directly measure the 2-photon contributions to the elastic electron-proton cross section.

The technical folks deserve much of the credit for keeping Hall B in good conditions and ready for experimentation. They have done a marvelous job in maintaining CLAS detectors and carrying out design and complex installation tasks of the FROST, PRIMEX and TPE experiments, and doing this in the most professional and safe way.

The HD-Ice target is being brought back to operation after its transfer from BNL to JLab. A new HDLab has been completed where the HD target samples will be polarized before the transfer to Hall B for installation in CLAS. The components of the in-beam cryostat (IBC) have been manufactured. The IBC will allow the HD target operation in CLAS. The group has been working hard to get the equipment ready for installation in March.

## **The 12 GeV Upgrade:**

The Hall B upgrade with CLAS12 had a very successful year 2010. The superconducting Torus and Solenoid magnets have entered the manufacturing phase, and the major procurements for the CLAS12 detectors are underway and most components for the pre-shower calorimeter (PCAL) and the drift chamber systems have been received. After the "clean room" in the EEL was restored to its original dedication as a class 10,000 room, stringing of the first region II drift chamber was completed last month. Thanks to Latifa's initiative, much more space has been transformed into clean space for detector assembly and will be used for PCAL, HTCC, CTOF, and SVT work. The sensors for the Silicon Vertex Tracker are in procurement, and a first chain test of 4 sensors was completed by the SiLab group at Moscow State University. Design and prototyping work is underway to enhance the tracking capabilities of the central detector by adding several layers of micro-mesh gas detectors to the central tracker.

The collaboration has 13 experiments approved and the PAC so far assigned 310 days of beam time and scientific ratings to 6 of the approved experiments. Several proposed experiments require additions to the base equipment, such as the detection of neutrons at large angles, and the detection of high energy charged kaons for which CLAS12 in its current implementation is not optimized. Several groups in the collaboration (most from Europe) have joined into initiatives to add detectors for high energy kaons and low momentum neutrons. Another european initiative is the proposed addition of a forward tagger for the detection of small angle electron scattering for meson spectroscopy. These will be expansive additions to CLAS12 and require cooperation of many groups to to develop the detectors and raise the necessary funds. They also reflect a growing involvement of international groups into defining the future directions of the research with CLAS12. This strongly increased involvement of the European groups in the JLAB upgrade and CLAS12 was marked with several recent visits of high-level representatives of French and Italian funding agencies.

None of what we have achieved in 2010 would have been possible without the effort of many people, from the highly dedicated collaborators and the Hall B technical staff, the polarized target and fast electronics groups, the computer center, to the effort of the accelerator operation group to provide high quality beam to Hall B. Fittingly, the year ended with a memorable end-of-the-run party for which the PRIMEX collaboration deserves credit.

## **The Year 2011:**

While we still have an important science program to complete in the coming years, the 12 GeV upgrade and CLAS12 will play an increasingly important role in our activities this year. Construction and testing of detector component will be in full swing at several institutions providing excellent opportunities for students and postdocs to get involved in the 12 GeV experimental program.

Let us all work together to make sure that 2011 will be another great year for the ongoing 6 GeV program and for our 12 GeV future!

I wish you all a peaceful and successful year 2011.

Volker Burkert