

January 29, 2009

Dear Barbara and Nu,

As we have discussed before, the dates of the 2009 RHIC/AGS PAC meeting are now set for June 15-16 at BNL. By the time of the meeting, we should clearly know the outcome concerning length of Run 9 (present indications from Congress regarding the FY09 omnibus funding bill remain very encouraging for RHIC operations, but the final word is not yet in). What I would like you both to focus on in your BUR presentations to PAC are your collaboration's preferences for beam species, energies, and physics goals for Runs 10 and 11, in light of whatever we will be able to achieve in Run 9. Of course, we have no idea yet concerning RHIC operating budgets for FY10 and FY11, but we are likely to have first indications for both years by the time of PAC. For now, in guiding your thinking, you should work under the assumptions that we will run 25 cryo-weeks in both runs 10 and 11 – i.e., the same number of weeks provided by the President's request for FY09. With the usual calculation, that leaves about 20 physics production weeks for a single species or 18 weeks for two different species. Beam energy changes should take much less time than species changes. Projections for luminosity should be taken from the latest version you have both received from Wolfram Fischer (or any updates that emerge based on experiences during Run 9). EBIS project completion remains on track for 4th quarter of FY10, which leaves open the possibility of having EBIS available during Run 11, though the schedule for that is tight.

I imagine a major topic of discussion at PAC will focus on the optimal strategy for a low-energy scan and search for QCD critical point and/or onset of deconfinement. The PAC meeting will immediately follow the CPOD workshop at BNL, and in addition, I will arrange a theory talk on CPOD subjects during the PAC. But you should both work on sharpening your collaboration's strategy in this regard.

Since there was a rather complete discussion of a 5-year plan at last year's PAC, I don't think we need to consider that in detail again in 2009. I remind you that after the PAC last May, I presented a tentative run plan through 2014 that included the various runs and upgrade timelines of which we were aware at that time. A copy of that tentative plan is attached to this e-mail. You can address the out-years (2012-14) in your PAC presentation if your collaboration feels that the attached plan needs major revision for those years, under the assumption of budgets that continue to provide for effective 2-species runs. (Of course, mid-course re-evaluations will be made each year as we learn our budgets and see what gets accomplished in each year's run.)

I would, however, also like you to address in your PAC presentations how your collaboration is preparing to make optimal use of the anticipated luminosity increases. As of now, the stochastic cooling upgrade remains on track to deliver time-averaged Au+Au luminosities at full energy a factor of 6-8 (within +/- 20-30 cm vertex cuts) higher than the original RHIC design luminosities in time for the 2011 run, with an intermediate step already available in 2010. Be prepared to summarize briefly your plans and issues for accommodating the higher luminosity in DAQ and trigger rate capabilities and offline data analysis capabilities, together with any relevant detector subsystem issues at higher luminosity. In particular, STAR should present the preliminary findings from the study of high luminosity effects on TPC performance, which was "ordered" by the 2008 RHIC S&T Review (and which will have to be presented in full at the July 2009 S&T Review). It will also be useful to update the PAC on progress toward upcoming detector upgrade installations.

In making a case for future pp running, you should also address your plans for accurate luminosity monitoring in light of increasing probability for multiple collisions within beam crossings and pileup in monitoring detectors.

Please let me know if there are other topics you would like to see evaluated by the PAC. Possibilities include: the science case for detector upgrades not yet approved (e.g., forward calorimetry in PHENIX, muon detectors in STAR); progress on resolving cross section differences between PHENIX and STAR (if this remains an issue past QM09).

Let me know if you have questions about any of the above.

Cheers,
Steve