

ISAC Science Forum, 2004/08/04

Present: G. Ball (GCB), J. Behr, L. Buchmann (LB), T. Cocolios (TC), B. Davids, A. Hurst (AH), D. Hutzcheon (DH), J. Lassen (JLa), J. Lee, P. Levy (PL), A.C. Morton (ACM), C. Pearson, M. Pearson, H. Schuessler (HS), T. Shimoda (TS), A. Shotter (AS), M.B. Smith, P. Walden – notes transcribed by ACM.

Minutes of previous meeting: Accepted without changes.

Report on Nuclei in the Cosmos VIII: L. Buchmann

LB reported on NiCVII, held July 19—23 at the Coast Plaza. 237 people attended the conference; with the exception of visa issues for those attending from China, there were no major problems. The conference was a success, and Martin Comyn is working to make conference content available as quickly as possible.

Report on prior/ongoing experiments:

E989, Astrophysical studies using ^{26}Al ground-state and isomeric beams: D. Hutzcheon

DH reported that the east target station failed to hold HV shortly after ^{26}Al was delivered to DRAGON; as a result, no further progress was made. The cause of the failure is under investigation. A leak in a cooling water line has been found, and may be one reason the target failed.

E903, Spectroscopic study of ^{11}Be with polarized ^{11}Li beam: T. Shimoda

TS reported that E903 was supposed to have started last week, but that in 13 shifts they have yet to observe >200 counts/second at the experimental station. Beam tuning is not yet complete. With nine shifts remaining, rates of several hundred particles/second are necessary to learn something about βny coincidences in the decay of ^{11}Li . The ^{11}Li intensity has been the biggest problem.

AH noted that the yield of ^8Li is consistent with past experience, while that of ^{11}Li is poor, and that a number of attempts have been made over the last several days to resolve this. Last night, Chris Payne improved the transmission through the separator; further improvements have been made in transitioning from a (stable) ^7Li tune to an ^{11}Li tune to the experimental station. Furthermore, the neutralization efficiency was observed to be a factor of ~2 lower than expected; PL has added Na to the cell in an effort to resolve this. A discussion of potential reasons for the poor yield followed.

TS requested additional beam time later this year with a better target. This request was noted by DH.

Report on upcoming experiments:

E920, Nuclear charge radii and moments of short-lived neutron deficient lanthanum and other rare earth isotopes: T. Cocolios

TC displayed expected frequency spectra showing the hyperfine splitting of several La isotopes. The goals of this experiment were discussed in detail at the last Science Forum.

TC described the work that will be done during the 36-hour period before the experiment. A 4 mm beam spot was requested. PL expressed a concern that, given the increased divergence of such a tightly-focused beam, radioactive beam could strike beamline elements downstream of the target. This will be resolved prior to the experiment. TC described a plan to use OLIS to test the beam deflection in order to ensure that ions are swept into the Faraday cup cleanly, but HS stated his opposition to such tests and his desire to proceed immediately to radioactive beams. GCB asked if the question of contamination or spill with deflection has been addressed; HS stated that he has attempted to do so, but has been unable to get a response from TRIUMF management.

DH asked how beam intensity will be determined during the experiment, and what information will be available to Operations. GCB suggested that the radiation safety monitors might be of some use, though AS questioned their utility given the lifetimes of the species involved.

The question of which beams will be used for tuning was also raised. GCB noted that expected beam contaminants greatly constrain the masses which can be used for tuning. This question was tabled for further discussion.

A full safety review of E920 will be conducted on Friday.

Other business:

HS expressed his desire to couple a voltage divider to the ion source high voltage in order to determine the beam energy. The question will be referred to Pierre Bricault (PB) when he returns from vacation. JLa noted that PB has been opposed to this in the past for technical reasons. GCB requested that any changes of this nature be fully documented for future reference.

Next meeting:

The next meeting will take place August 18, 2004.