Minutes of the ISAC Science Forum
held on November 9Th 2005

Past experiments:

E989 ^{26}Al(p,γ)……Chris Ruiz

Chris reported that the data taking for that experiment was successfully completed with data taken on and off resonance. He described the steps involved in the analysis and anticipates that a 16% precision on the resonance strength will be achievable. The main contribution to systematic errors will probably be the efficiency of the BGO array. A PRL paper is being drafted. He thanked again everyone involved for the excellent beam delivery in October.

E1*027 ^{22}Na(p,γ)……J.Caggiano/M.Tinczek*

Implantation were conducted in collection station of the separator room. After fixing some misalignment in the collector system, good ^{22}Na beam transmission was achieved,200 na of ^{22}Na beam at 30Kv was available and two targets were produced (300μC and 185μC). The action moves to U of Washington where preparation for the beamline and reaction chamber are under way .

E992 20Ne(3He,4He)……B.Davids/G.Ball

The experiment is trying to determine the gamma width of the 4.033Mev state in ^{19}Ne which the key resonance for breaking away from the CNO cycle via the ^{15}O(α,γ) reaction. About 6 10^{17} at/cm2 3He ions were implanted in foils at U de Montreal but there is evidence of carbon contamination on the surface of these targets. The group is considering making their own implants at OLIS . They are limited in beam current by the stripper foil lifetime which requires two or three foils per shifts even after the broadening of the beam spot at the stripper. An other limitation comes from the neutron levels seen by the two germanium detectors which being of the p-type are quite sensitive to neutron damage. The run is terminated pending resolution of these issues. Encouraging evidence of the 4.033 MeV state was shown. Running at a higher energy would increase the population of the state of interest and that could be considered by running at ISAC II .

Upcoming experiments:

The next ISAC production target has been produced. Due to some difficulties in the evaporator during the baking process, a previous Ta containment tube was recycled and it is hoped that the ZrC target will work as planned. For TRILIS, J. Lassen is going to use the same ionization scheme as last December but with pumping from both hyperfine ground states which should double the laser ionization efficiency.

E823: ^{62}Ga lifetime……G.Ball

Gordon reviewed the physics interest in obtain a complete set of information to extract the Ft value for the superallowed decay of ^{62}Ga. The Q value is well determined by a recent IGISOL mass measurement to 1keV precision (that could be improved with TITAN to the 160ev level), the branching ratio has been well established with the 8π last year and the lifetime measurement can be considerably improved from the ISAC measurement done in 2003 where long lived contamination from Cu isotopes limited the period of observation to few lifetimes. The laser versus surface ionization is key to removing the contamination. Marik has removed some of carbon coating he used previously on the extraction tube to also reduce surface ionization.

E956 ^{80}Rb spin asymmetries……J.Behr

John reviewed the improvement he made to his set up to improve the efficiency of the measurement in singles mode by detecting the shake off electron in coincidence with the recoils. He has mounted a MCP on both arm of the detection axis, one for recoils ^{79}Kr one for electrons. He expects to pushing his asymmetry measurement to a .002 precision and provide good limits on possible tensor interactions

E1024: ^{40}Ca(α,γ) ^{44}Ti……C.Vockenhuber

The experiment is going to continue and assess the observed reaction strength that seems to be anomalously high on the lower side of the resonance at 9.2 MeV excitation. Some concerns have surfaced regarding the beam energy width and calibration which were used in previous run .That will be looked into with Bob Laxdal ‘s team.

JMP indicated that 17 new proposals were received for the December meeting of the subatomic Experiment Evaluation Committee (EEC). 15 of those are for the ISAC program together with 4 extensions and 3 LOI’s.

Next Forum on November 23rd.